MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

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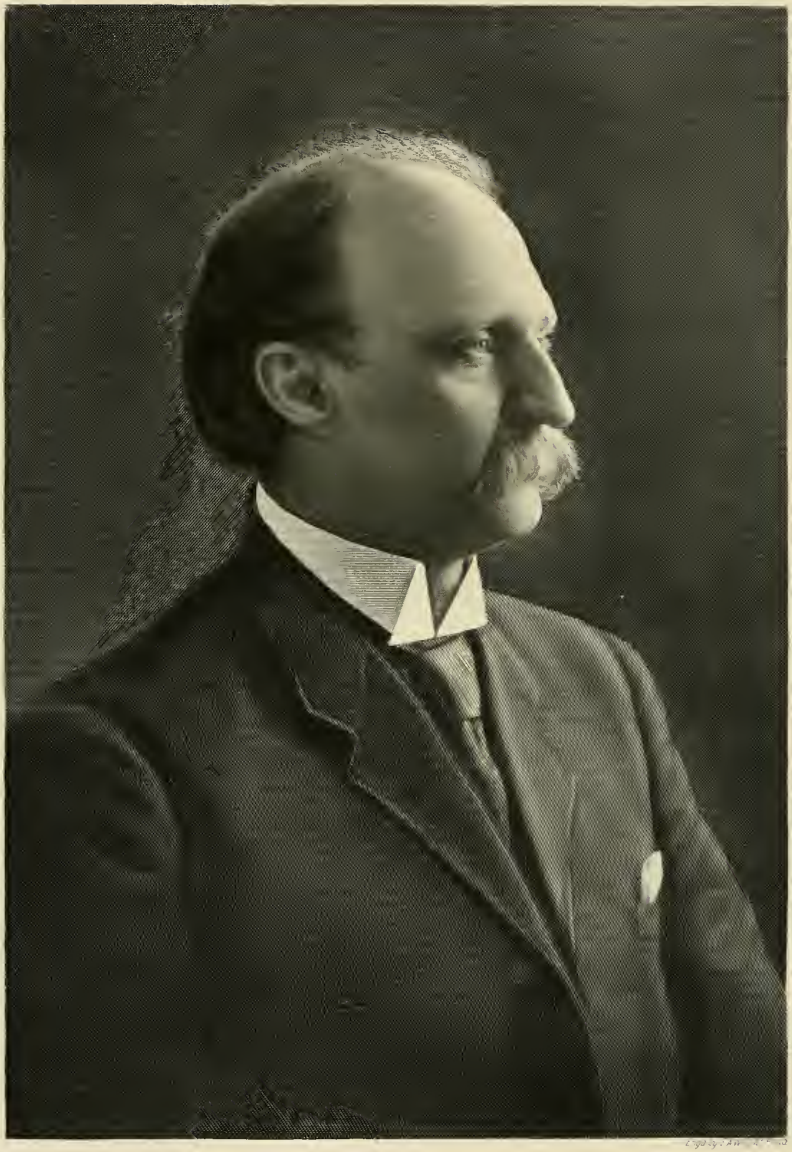

Sincerely
J. Howell Way

TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF NORTH CAROLINA.

FIFTY-FIFTH ANNUAL MEETING

HELD AT

Winston-Salem, N. C., June 16, 17 and 18, 1908.

President, Dr. J. HOWELL WAY, *Waynesville, N. C.*
Secretary, Dr. DAVID A. STANTON, *High Point, N. C.*

RALEIGH
EDWARDS & BROUGHTON PRINTING COMPANY
1908

Publication Committee.

Dr. D. A. Stanton.....High Point
Dr. E. C. Register.....Charlotte
Dr. W. H. Wakefield.....Charlotte

"It is to be understood that the Society is not to be considered as endorsing all the views and opinions of authors of papers published in the transactions of the Society."—*Extract from By-Laws, chap.* 10, *sec.* 8.

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ROSTER OF OFFICERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM ORGANIZATION TO 1908.

* Missing Data not to be Found in Records.

	Date.	Place.	Members in Attendance.	President.	Vice-Presidents.	Secretary.	Treasurer.	Members on Roll.*	Honorary Members.*	Honorary Fellows.*
	1849	Raleigh	25	F. J. Hill		W. H. McKee		25		
1	1850	Raleigh	21	Edmund Strudwick	F. J. Haywood, C. E. Johnson, J. E. Williamson, W. G. Thomas.	W. H. McKee	W. G. Hill	38	9	
2	1851	Raleigh	23	Edmund Strudwick	C. E. Johnson	W. H. McKee	W. G. Hill	46	9	
3	1852	Wilmington	38	J. E. Williamson	Thomas N. Cameron, William G. Hill. Johnston B. Jones, N. J. Pittman.	E. B. Haywood	J. J. W. Tucker	72	12	
4	1853	Fayetteville	21	J. E. Williamson	Wm. G. Hill, Johnston B. Jones, J. B. G. Myers, N. J. Pittman.	W. W. Harris	Daniel Dupree	80	14	
5	1854	Raleigh	37	J. H. Dickson	N. J. Pittman, J. B. G. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell	Daniel Dupree	84	17	
6	1855	Salisbury	23	J. H. Dickson	J. Graham Tull, Owen Hadley, A. D. McLean, Hugh Kelly.	S. S. Satchwell	J. B. Dunn	96	18	
7	1856	Raleigh	37	C. E. Johnson	Marcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	S. S. Satchwell	J. B. Dunn	101	22	
8	1857	Edenton	35	C. E. Johnson	Marcellus Whitehead, O. F. Manson, H. W. Faison, E. T. Gibson.	W. G. Thomas	J. B. Dunn	113	16	
9	1858	New Bern	69	W. H. McKee	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	W. G. Thomas	J. B. Dunn	172	18	
10	1859	Statesville	81	W. H. McKee	James G. Ramsay, P. E. Hines, J. R. Mercer, W. P. Howard	W. G. Thomas	C. W. Graham			
11	1860	Washington	61	N. J. Pittman	P. T. Henry, R. H. Winborne, M. Whitehead, T. S. Leach.	W. G. Thomas	C. W. Graham	233	18	
12	1861	Morganton	23	N. J. Pittman	J. J. Summerell, C. T. Murphy, G. W. Hodges, W. A. B. Norcom.	W. G. Thomas	C. W. Graham	241	18	
13	1866	Raleigh	20	I. J. Summerell		W. G. Thomas	C. W. Graham			
14	1867	Tarboro	41	W. G. Thomas	E. Burke Haywood, R. H. Winborne, W. L. Barrow, J. W. Jones.	S. S. Satchwell	C. W. Graham	228	11	
15	1868	Warrenton	27	S. S. Satchwell	Hugh Kelly, George E. Foote, Charles J. O'Hagan, J. H. Baker.	Thomas F. Wood	J. W. Jones			
16	1869	Salisbury	36	E. Burke Haywood	Thos. E. Wilson, A. B. Pierce, C. T. Murphy, M. A. Locke.	Thomas F. Wood	J. W. Jones			
17	1870	Wilmington	38	C. J. O'Hagan	E. A. Anderson, F. N. Lucky, W. R. Sharpe, R. L. Payne.	Thomas F. Wood	J. W. Jones			

18	1871	Raleigh	35	Hugh Kelly	D. N. Patterson, R. C. Pearson, J. B. Seavy, G. L. Kirby.	Thomas F. Wood	J. W. Jones				
19	1872	New Bern	34	W. G. Hill	H. W. Faison, R. I. Hicks, G. H. Macon, W. A. B. Norcom.	James McKee	J. W. Jones				
20	1873	Statesville	43	M. Whitehead	W. T. Emnett, William Little, Chas. Dufly, T. P. Jerman.	James McKee	H. T. Bahnson				
21	1874	Charlotte	56	W. A. B. Norcom	J. B. Jones, R. F. Lewis, C. G. Cox, J. L. Knight.	James McKee	H. T. Bahnson	126	5		
22	1875	Wilson	60	J. W. Jones	Walter Debnam, J. A. Gibson, Wm. Little, D. N. Patterson.	James McKee	H. T. Bahnson	148	5		
23	1876	Fayetteville	33	Peter E. Hines	Jos. H. Baker, G. G. Smith, T. D. Haigh, J. K. Hall.	James McKee	H. T Bahnson	157	4		
24	1877	Salem	42	George A. Foote	J. K. Hall, B. W. Robinson, A. Holmes, A. A. Hill	James McKee	A. G. Carr	177	4		
25	1878	Goldsboro	79	R. L. Payne	E. M. Rountree, Richard Anderson, S. B. Flowers, L. A. Stith.	L. J. Picot	A. G. Carr	194	6		
26	1879	Greensboro	109	Charles Dufly, Jr.	J. A. Gibson, Willis Alston, Jas. McKee, A. A. Hill.	L. J. Picot	A. G. Carr	198	6		
27	1880	Wilmington	105	J. F. Shaffner	J. K. Hall, W. C. McDuffie, W. R. Wilson. R. F. Lewis.	L. J. Picot	A. G. Carr	225	6		
28	1881	Asheville	92	R. B Haywood	J. E. McKee, W. H. Lilly, R H. Speight, W. J. H. Bellamy.	L. J. Picot	A. G. Carr	254	6		
29	1882	Concord	65	Thomas F. Wood	T. J. Moore, D. J. Cain, S. E. Evans, John McDonald.	L. J. Picot	A. G. Carr	297	7		
30	1883	Tarboro	112	J. K. Hall	A. W. Knox, J. M. Hadley, E. S. Foster, John Whitehead.	L. J. Picot	A. G. Carr	310	7		
31	1884	Raleigh	112	A. B. Pierce	F. W. Potter, G. W. Graham, R. Dillard, G. W. Long.	L. J. Picot	A. G. Carr	348	7		
32	1885	Durham	173	W. C. McDuffie	James McKee, T. E. Anderson, W. H. Whitehead, A. G. Carr.	W. C. Murphy	R. L. Payne, Jr	421	6		
33	1886	New Bern	113	Joseph Graham	H. T. Bahnson, L. J. Picot, J. L McMillan, W. W. Faison	J. M. Baker	R. L. Payne, Jr	438	7		
34	1887	Charlotte	112	H. T. Bahnson	G. G. Smith, J. L. Nicholson, C. M. Poole, H. B. Ferguson.	J. M. Baker	R. L. Payne, Jr	452	7		
35	1888	Fayetteville	133	T. D. Haigh	W. P. Ennett, J. A. Dunn, T. E. Anderson	J. M. Baker	C. M. Poole	306	6		
36	1889	Elizabeth City	50	W. T. Ennett	W. J. Jones, S. W. Stevenson, G. W. Long	J. M. Baker	C. M. Poole	410	6		
37	1890	Oxford	160	G. G. Thomas	R. L. Payne, Jr., Richard Dillard, S. W. Booth	J. M Hays	C. M. Poole	414	6		
38	1891	Asheville	135	R. H. Lewis	S. W. Battle, J. L. Nicholson, W. H Lilly	J. M. Hays	C. M. Poole	422	6		
39	1892	Wilmington	162	W. T. Cheatham	T. S. Burbank, J. W. Long, W. H. H. Cobb, W. D. Hilliard.	J. M Hays	C. M. Poole	431	6		
40	1893	Raleigh	221	J. W. McNeill	W. G. Galloway, H. H. Harris, J. M. Hadley, Thomas Hill.	R. D. Jewett	M P Perry	447	6	3	
41	1894	Greensboro	166	W. H. H. Cobb	J. A. Hodge, R. W. Tate, Willis Alston, M. H. Fletcher.	R. D. Jewett	M. P. Perry	454	5	3	

ROSTER OF NORTH CAROLINA MEDICAL SOCIETY—Continued.

* Missing Data not to be Found in Records.

	Date.	Place.	Members in Attendance.	President.	Vice-Presidents.	Secretary.	Treasurer.	Members on Roll *	Honorary Members. *	Honorary Fellows. *
42	1895	Goldsboro		J. H. Tucker	J. Howell Way, W. H. Harrell, O. McMullan, C. A. Misenheimer.	R. D. Jewett	M. P. Perry	436	7	3
43	1896	Winston-Salem	158	R. L. Payne	S. D. Booth, J. P. Monroe, J. A. Burroughs, J. E. Grimsley.	R. D. Jewett	M. P. Perry	452	7	3
44	1897	Morehead City	103	P. L. Murphy	J. C. Walton, A. A. Kent, M. R. Adams, B. L. Long.	R. D. Jewett	M. P. Perry	406	6	3
45	1898	Charlotte		Francis Duffy	E. C. Register, A. T. Cotton, J. B. H. Knight, F. H. Russell	R. D. Jewett	M. P. Perry	437	6	21
46	1899	Asheville	152	L. J. Picot	I. W. Faison, J. W. White, H. H. Dodson, W. C. Brownson.	George W. Pressly	G. T. Sikes	489	6	16
47	1900	Tarboro	115	George W. Long	C. M. Poole, James M. Parrott, T. B. Williams, W. D. Hilliard	George W. Pressly	G. T. Sikes	482	6	21
48	1901	Durham	186	Julian M. Baker	M. H. Fletcher, C. A. Julian, D. A. Stanton, E. M. Summerell.	George W. Pressly	G. T. Sikes	515	5	18
49	1902	Wilmington	147	Robert S. Young	A. G. Carr, E. D. Dixon-Carroll, I. M. Taylor, J. M. Parrott.	George W. Pressly	G. T. Sikes	546	5	20
50	1903	Hot Springs	155	A. W. Knox	E. G. Moore, C. A. Julian, W. W. McKenzie, J. L. Nicholson.	J. Howell Way	G. T. Sikes	530	6	19
51	1904	Raleigh	326	H. B. Weaver	John Hey Williams, John C. Rodman, S. F. Pfohl.	J. Howell Way	G. T Sikes	1033	8	17
52	1905	Greensboro	361	David T. Tayloe	C. A. Julian, John T. Burrus, I. W. Faison	J. Howell Way	G. T. Sikes	1175	8	17
53	1906	Charlotte	406	Edward C. Register	L. B. McBrayer, W. H. Cobb, Jr., W. O. Spencer.	J. Howell Way	G. T. Sikes	1234	8	16
54	1907	Morehead City	217	Samuel D. Booth	C. M. Strong, J. E. McLoughlin, W. F. Hargrave.	David A. Stanton	H. McKee Tucker	888	7	16
55	1908	Winston-Salem	372	J. Howell Way	J. E. Stokes, J. A. Turner, Nixon Edwards	David A. Stanton	H. McKee Tucker	998	7	28

*JAMES H. DICKSON, Wilmington	1859–1866
*Charles E. Johnson, Raleigh	1859–1866
*Caleb Winslow, Hertford	1859–1866
*Otis F. Manson, Townsville	1859–1866
*William H McKee, Raleigh	1859–1866
*Christopher Happoldt, Morganton	1859–1866
*J. Graham Tull, New Bern	1859–1866
*SAMUEL T. IREDELL, Secretary	1859–1866
*N. J. PITTMAN, Tarboro	1866–1872
*E. Burke Haywood, Raleigh	1866–1872
*R H Winborne, Edenton	1866–1872
*S. S. Satchwell, Rocky Point	1866–1872
*J. J. Summerell, Salisbury	1866–1872
*R. B. Haywood, Raleigh	1866–1872
*M. Whitehead, Salisbury	1866–1868
J. F. Shaffner, Salem	1868–'872
*WILLIAM LITTLE, Secretary	1866–1872
*CHARLES J. O'HAGAN, Greenville	1872–1879
*W. A. B. Norcom, Edenton	1872–1878
*C. Tate Murphy	1872–1878
*George A. Foote, Warrenton	1872–1878
*J. W. Jones, Tarboro	1872–1878
*R. L. Payne, Lexington	1872–1878
CHARLES DUFFY JR., New Bern	1872–'878
*P. E. HINES, Raleigh	1878–1884
*T. D. Haigh, Fayetteville	1878–1881
*R. I. Hicks, Williamsboro	1878–1880
*George L. Kirby, Goldsboro	1878–1884
*Thomas F Wood, Wilmington	1878–1881
*Joseph Graham, Charlotte	1878–1884
H. T. BAHNSON, Salem	1878–1891
R. H. Lewis, Raleigh	1880–1884
*WILLIAM R. WOOD, Scotland Neck	1881–1890
A. W. Knox, Raleigh	1884–1890
Francis Duffy, New Bern	1884–1890
*P. L. Murphy, Morganton	1884–1890
Willis Alston, Littleton	1884–1890
W. J. H BELLAMY, Wilmington	1884–1890
J. A Reagan, Weaverville	1884–1890
R. L. Payne, Jr., Norfolk, Va	1890–1892
George W. Purefoy, Asheville	1890–1892
George G. Thomas, Wilmington	1890–1894
Robert S. Young Concord	1890–1894
George W. Long, Graham	1890–1896
W. H. WHITEHEAD, Rocky Mount	1890–1896
L. J. Pieot, Littleton	1890–1896
JULIAN M. BAKER, Tarboro	1892–1898
H. B. Weaver, Asheville	1892–1898
†T. S. Burbank, Wilmington	1894–1898
*J M. Hays, Greensboro	1894–1897
D. T. TAYLOE, Washington	1896–1902
†R. H. Whitehead, Chapel Hill	1896–1897
THOMAS E. ANDERSON, Statesville	1896–1902
Kemp P. Battle, Raleigh	1897–1900
J. HOWELL WAY, Waynesville	1897–1902
W H. H. Cobb, Goldsboro	1898–1900
Albert Anderson, Raleigh	1898–1902
E. C. REGISTER, Charlotte	1898–1902
Thomas S. McMullan, Hertford	1900–1902
John C. Walton, Richmond, Va	1900–1902
†George W. Pressly, Charlotte	1902–1906
A. A. KENT, Lenoir	1902–1908
G. T. Sikes, Grissom, (Secy.)	1906–1908
CHARLES O'HAGAN LAUGHINGHOUSE, Greenville	1902–1908
M. H. FLETCHER Asheville	1902–902
James M Parrott, Kinston	1902–1908
J. T. J. Battle, Greensboro	1902–1908
Frank H. Russell, Wilmington	1902–1908

* Dead. †Resigned.

NOTE.—The names of those who served as President appear above in CAPS while those of the various Secretaries appear in SMALL CAPITALS.

BOARD OF MEDICAL EXAMINERS 1908-1914.

JOHN C. ROLMAN, President, Washington, Chemistry and Paediatries.
BENJ. K. HAYS, Secretary, Oxford, Materia Medica.
LEWIS B. MCBRAYER, Asheville, Surgery.
WM. W. MCKENZIE, Salisbury, Anatomy and Histology.
HENRY H. DODSON, Greensboro, Practice of Medicine.
JOHN BYNUM, Winston-Salem, Obstetrics and Gynæcology.
J. L. NICHOLSON, Richlands, Physiology and Hygiene.

NEXT ANNUAL SESSION AT ASHEVILLE, JUNE 9, 1909.

ROSTER OF MEMBERS NORTH CAROLINA STATE BOARD OF HEALTH, FROM ORGANIZATION IN 1877 TO 1908.

Name.	Address.	Appointed by	Term.
S. S Satchwell, M. D., President	Rocky Point	State Society	1877 to 1878
Thom s F. Wood, M. D., Secretary	Wilmington	St te Society	1877 to 1878
Joseph Graham, M. D	Charlotte	State Society	1877 to 1878
Charles Duffy, Jr., M. D	New Bern	State Society	1877 to 1878
Peter E. Hines, M. D	Raleigh	State Society	1877 to 1878
George A. Foote, M. D	Warrenton	State Society	1877 to 1878
S. S. Satchwell, M. D., President	Rocky Point	State Society	1878 to 1884
Thomas F. Wood, M. D., Secretary	Wilmington	State Society	1878 to 1884
Chas. J. O'Hagan M. D., President	Greenville	State Society	1878 to 1882
George A. Foote, M. D	Warrenton	State Society	1878 to 1882
Marcellus Whitehead, M. D	Salisbury	State Society	1878 to 1880
R. L. Payne, M. D	Lexington	State Society	1878 to 1880
H. G. Woodfin, M. D	Franklin	Gov. Z. B. Vance	1878 to 1880
A. R. Ledeux, Chemist	Chapel Hill	Gov. Z. B. Vance	1878 to 1880
William Cain, Civil Engineer	Charlotte	Gov. Z. B. Vance	1878 to 1880
R L Payne, M. D	Lexington	State Society	1881 to 1887
Marcellus Whitehead, M. D., President	Salisbury	State Society	1881 to 1884
J. M. Lyle, M. D	Franklin	Gov T. J. Jarvis	1881 to 1883
William Cain, Civil Engineer	Charlotte	Gov. T. J. Jarvis	1881 to 1883
W. G. Simmons, Chemist	Wake Forest	Gov. T. J Jarvis	1881 to 1883
J. W. Jones, M. D., President	Wake Forest	State Society	1883 to 1889
John McDonald, M, D	Washington	S ate Society	1883 to 1889
S. H. Lyle, M D	Franklin	Gov. T. J. Jarvis	1883 to 1885
W. G. Simmons, Chemist	Wake Forest	Gov. T. J Jarvis	1883 to 1885
Arthur Winslow, Civil Engineer	Raleigh	Gov. T. J. Jarvis	1883 to 1886
R. H. Lewis, M. D	Raleigh	State Board	1884 to 1893
Thomas F. Wood, M. D., Secretary	Wilmington	State So iety	1885 to 1887
William D. Hilliard, M. D	Asheville	State Society	1885 to 1891
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1885 to 1891
W. G. Simmons, Chemist	Wake Forest	Gov. A. M. Scales	1885 to 1887
J. H. Tucker, M. D	Henderson	Gov A. M. Scales	1885 to 1887
R. H. Lewis, M. D., Secretary	Raleigh	State Society	1887 to 1897
H T. Bahnson, M. D , President	Winston-Salem	State Society	1887 to 1893
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1887 to 1888
W. G. Simmons, Chemist	Wake Forest	Gov. A. M Scales	1887 to 889
J. H. Tucker, M. D	Henderson	Gov. A. M. Scales	1887 to 1889
J. L. Ludlow, Civil Engineer	Winston	Gov. A. M. Scales	1888 to 1891
J H. Tucker, M. D	Henderson	Gov. D. G. Fowle	1889 to 1891
F. P. Venable, Ph. D., Chemist	Chapel Hill	Gov. D. G. Fowle	1889 to 1891
J. L. Ludlow, Civil Engineer	Winston	Gov. D. G. Fowle	1889 to 1893
J. A. Hodges, M. D	Fayetteville	State Society	1889 to 1892
J. M. Baker, M D	Tarboro	State Society	1889 to 1893
J. H. Tucker, M. D	Henderson	Gov. Thomas M. Holt	1891 to 1893
F. P. Venable, Ph. D., Chemist	Chapel Hill	Gov. Thomas M. Holt	1891 to 1893
J L. Ludlow, Civil Engineer	Winston	Gov. Thomas M. Holt	1891 to 1892
* Thomas F. Wood, M. D., Secretary	Wilmington	State Society	1891 to 1897
George G. Thomas, M. D., President	Wilmington	State Board Health	1892 to 1897
S. Westray Battle, M. D	Asheville	State Society	1891 to 1895
W. H. Harrell, M. D	Williamston	State Society	1892 to 1895
John Whitehead, M. D	Salisbury	State Board Health	1893 to 1895
W. H. G. Lucas, M. D	White Hall	Gov. Elias Carr	1893 to 1895
F. P. Venable, Ph. D., Chemist	Chapel Hill	Gov. Elias Carr	1893 to 1895
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1893 to 1895
R. H. Lewis, M. D , Secretary	Raleigh	Gov Elias Carr	1893 to 1895
W. P. Beall, M. D	Greensboro	Gov. Elias Carr	1893 to 1897
John Whitehead, M. D	Salisbury	State Society	1895 to 1897
W. H. Harrell, M. D	Williamston	State Society	1895 to 1897
W. P. Beall, M. D	Greensboro	Gov. Elias Carr	1895 to 1897
W. J. Lumsden, M. D	Elizabeth City	Gov. Elias Carr	1895 to 1897
R. H. Lewis, M. D., Secretary	Raleigh	Gov. Elias Carr	1895 to 1897
F. P. Venable, Ph. D., Chemist	Chapel Hill	Gov. Elias Carr	1895 to 1897
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1895 to 1897
C. J. O'Hagan, M. D	Greenville	Gov D. L. Russell	1897 to 1899
John D. Spicer, M. D	Goldsboro	Gov. D. L. Russell	1897 to 1899
J L. Nicholson, M, D	Richlands	Gov. D L. Russell	1897 to 1899
R. H. Lewis, M. D., Secretary	Raleigh	Gov. D. L. Russell	1897 to 1899
A. W. Shaffer, Sanitary Engineer	Raleigh	Gov. D. L Russell	1897 to 1899
Charles J. O'Hagan, M. D	Greenville	Gov. D. L. Rus-ell	1899 to 1901
J. L. Nicholson, M. D	Richlands	Gov. D. L. Russell	1899 to 1901
Albert Anderson, M. D	Wilson	Gov. D. L. Russell	1899 to 1901
R. H. Lewis, M. D., Secretary	Raleigh	Gov. D. L. Russell	1899 to 1901
A. W. Shaffer, Civil Engineer	Raleigh	Gov. D. L. Russell	1899 to 1901
George G. Thomas, M. D., President	Wilmington	State Society	1899 to 1901
S. Westray Battle, M. D	Asheville	State Society	1899 to 1901
H. W. Lewis, M. D	Jackson	State Society	1899 to 1901
H. H. Dodson, M. D	Milton	State Society	1899 to 1901
R. H. Lewis, M. D., Secretary	Raleigh	Gov. C. B. Aycock	1901 to 1907
W. P. Ivey, M. D	Lenoir	Gov. C B. Aycock	1901 to 1907
George G. Thomas, M. D., President	Wilmington	Gov. C. B. Aycock	1901 to 1905
Francis Duffy, M D	New Bern	Gov C. B. Aycock	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1901 to 1903
S. Westray Battle, M. D	Asheville	State Society	1901 to 1907
H. W. Lewis, M. D	Northampton	State Society	1905 to 1907
W. H. Whitehead, M. D	Rocky Mount	State Society	1901 to 1905
J. L. Nicholson, M. D	Richlands	State Society	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C B. Aycock	1903 to 1909
J. Howell Way, M. D	Waynesvil e	Gov. R. B. Glenn	1905 to 1911
W. C. Spencer, M. D	Winston	Gov R. B Glenn	1905 to 1911
George G. Thomas, M. D., President	Wilmington	State Society	1905 to 1911
Thomas E Anderson, M. D	Statesville	State Society	1905 to 1911
R. H. Lewis, M. D	Raleigh	Gov. R. B. Glenn	1907 to 1913
E. C. Register, M. D	Charlotte	Gov. R. B. Glenn	1907 to 1913
David T. Tayloe, M. D	Washington	State Society	1907 to 1913
James A. Burroughs, M. D	Asheville	State Society	1907 to 1913

* Died in 1892, leaving a five-year unexpired term, which was filled by the Board.

Officers and Committees, 1908.

Meeting at Winston-Salem, N. C.

President—Dr. J. HOWELL WAY.....Waynesville.
First Vice-President—Dr. J. E. STOKES.....Salisbury.
Second Vice-President—Dr. J. A. TURNER.....High Point.
Third Vice-President—Dr. NIXON EDWARDS.....Beaufort.
†*Secretary*—Dr. DAVID A. STANTON.....High Point.
†*Treasurer*—Dr. H. McKEE TUCKER.....Raleigh.

Councilors.*

First District—Dr. Oscar McMullen, Elizabeth City.
Second District—Dr. R. A. Whitaker, Kinston.
Third District—Dr. Frank H. Russell, Wilmington.
Fourth District—Dr. Albert Anderson, Wilson.
Fifth District—Dr. J. F. Highsmith, Fayetteville.
Sixth District—Dr. Hubert A. Royster, Raleigh.
Seventh District—Dr. Chas. M. Strong, Charlotte.
Eighth District—Dr. J. B. Smith, Pilot Mountain.
Ninth District—Dr. Isaac M. Taylor, Morganton.
Tenth District—Dr. Jas. A. Burroughs, Asheville.

Orator—Dr. Chas. S. Mangum, Chapel Hill.
Essayist—Dr. Thos. R. Little, Greensboro.
Leader of Debate—Dr. S. E. Koonce, Wilmington.

‡*Members House of Delegates American Medical Association*—Dr. J. F. Highsmith, Fayetteville; Alternate, Dr. Joseph Ackerman, Wilmington; Dr. A. J. Crowell, Charlotte; Alternate, Dr. E. Reid Russell, Charlotte; Dr. Pride J. Thomas, Wilmington; Alternate, Dr. Albert Anderson, Raleigh.

Committee on Public Policy and Legislation—Dr. J. Howell Way, Waynesville; (*ex officio*) Dr. R. H. Lewis, Raleigh; Dr. H. A. Royster, Raleigh; Dr. J. E. Brooks, Greensboro; Dr. D. A. Stanton, High Point, (*ex officio*).

Committee on Publication—Dr. E. C. Register Charlotte; Dr. W. H. Wakefield, Charlotte; Dr. D. A. Stanton, High Point, (*ex officio*).

Committee on Finance—Dr. R. W. Smith, Hertford; Dr. W. A. Monroe, Monroe; Dr. D. A. Garrison, Bessemer City.

Committee on Scientific Work—Dr. E. J. Wood, Wilmington; Dr. John C. Rodman, Washington; Dr. D. A. Stanton, High Point, (*ex officio.*)

Committee on Obituaries—Dr. Chas. A. Julian, Thomasville; Dr. Benj. K. Hays, Oxford; Dr. R. L. Gibbon, Charlotte.

Local Member Committee on Arrangements, Winston-Salem Session, 1908—Dr. W. O. Spencer, Winston-Salem.

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* Councillors elected for three years, terms expiring at 1910 session.
† Terms expire at 1909 session.
‡ Terms expired at 1908 session.

Officers and Committees, 1909.

President—Dr. J. F. HIGHSMITH.....Fayetteville.
First Vice-President—Dr. C. M. POOLE.....Salisbury, R. F. D.
Second Vice-President—Dr. D. A. GARRISON.....Bessemer City.
Third Vice-President—Dr. D. A. DEES.....Bayboro.
Secretary—Dr. D. A. STANTON, (Term expires 1909)....High Point.
Treasurer—Dr. H. McKEE TUCKER (Term expires 1909)...Raleigh.

Councilors.

(Term expires 1910.)

First District—Dr. Oscar McMullan, Elizabeth City.
Second District—Dr. R. A. Whitaker, Kinston.
Third District—Dr. Frank H. Russell, Wilmington.
Fourth District—Dr. E. T. Dickinson, Wilson.
Fifth District—Dr. J. F. Highsmith, Fayetteville.
Sixth District—Dr. Hubert A. Royster, Raleigh.
Seventh District—Dr. Chas. M. Strong, Charlotte.
Eighth District—Dr. J. B. Smith, Pilot Mountain.
Ninth District—Dr. Isaac M. Taylor, Morganton.
Tenth District—Dr. James A. Burroughs, Asheville.

Orator—Dr. Chas. W. Moseley, Greensboro.
Essayist—Dr. Wm. LeRoy Dunn, Asheville.
Leader of Debate—Dr. Leon B. Newell, Charlotte.

Members House of Delegates American Medical Association—Dr. J. Howell Way, Waynesville; Alternate, Dr. P. J. Thomas, Wilmington (1908-1910); Dr. A. J. Crowell, Charlotte; Alternate, Dr. D. S. George, Bayboro, (1908-1910); Dr. D. A. Stanton, High Point; Alternate, Dr. H. H. Dodson, Greensboro, (1908-1909).

Committee on Public Policy and Legislation—Dr. J. F. Highsmith, Fayetteville; *ex officio;* Dr. R. H. Lewis, Raleigh; Dr. Geo. G. Thomas, Wilmington; Dr. Albert Anderson, Raleigh; Dr. D. A. Stanton, High Point, *ex officio.*

Committee on Publication—Dr. E. C. Register, Charlotte; Dr. W. H. Wakefield, Charlotte; Dr. D. A. Stanton, High Point, *ex officio.*

Committee on Scientific Work—Dr. Watson S. Rankin, Wake Forest; Dr. John Bynum, Winston; Dr. D. A. Stanton, High Point, *ex officio.*

Committee on Finance—Dr. H. S. Lott, Winston-Salem; Dr. J. M. Blair, Monroe; Dr. R. E. L. Flippen, Pilot Mountain.

Committee on Obituaries—Dr. Chas. A. Julian, Thomasville; Dr. A. A. Kent, Lenoir; Dr. S. T. Nicholson, Washington.

Committee on Arrangements Asheville Session 1909, Local Member of —Dr. Thos. E. W. Brown, Asheville.

The fifty-sixth annual session of the Medical Society of the State of North Carolina will convene at Asheville, N. C., June 14, 1909. The hearty cooperation and attendance of all members of the component County Medical Societies of the State is desired to make the occasion the most complete success posible.

Chairmen of Sections

Session of 1909

Anatomy and Surgery—Dr. T. E. W. Brown, Asheville.

Materia Medica and Therapeutics—Dr. John Q. Myers, North Wilkesboro.

Practice of Medicine—Dr. Edward Jenner Wood, Wilmington.

Physiology and Chemistry—Dr. L. B. Newell, Charlotte.

Obstetrics—Dr. A. B. Croom, Maxton.

Gynecology—Dr. H. A. Royster, Raleigh.

Medical Jurisprudence and State Medicine—Dr. W. P. Holt, Duke.

Pathology and Microscopy—Dr. Watson S. Rankin, Wake Forest.

Railway Surgery—Dr. J. Vance McGougan, Fayetteville.

Pædiatrics—Dr. James J. Philips, Tarboro.

Delegates to Mississippi Valley Medical Association—Dr. W. O. Spencer, Winston-Salem; Dr. J. H. Shuford, Hickory; Dr. Cyrus Thompson, Jacksonville; Dr. W. D. Pemberton, Concord; Dr. W. N. Hicks, Durham; Dr. W. J. Stevens, Ashpole.

Delegates to Virginia Medical Association—Dr. J. L. Doughton, Alleghany; Dr. J. J. Philips, Tarboro; Dr. S. C. Highway, Murphy; Dr. F. H. Gilreath, North Wilkesboro; Dr. J. A. Williams, Greensboro.

Delegates to South Carolina State Medical Association—Dr. W. D. Witherbee, Charlotte; Dr. D. N. Dalton, Winston-Salem; Dr. Earle Grady, Tryon; Dr. J. F. McKay, Buie's Creek.

State Board of Medical Examiners, 1908-1914—Dr. John C. Rodman, Washington, President, Chemistry and Pædiatrics; Dr. Benj. K. Hays, Oxford, Secretary, Materia Medica; Dr. Lewis B. McBrayer, Asheville, Surgery; Dr. Wm. W. McKenzie, Salisbury, Anatomy and Histology; Dr. Henry H. Dodson, Greensboro, Practice of Medicine; Dr. John Bynum, Winston-Salem, Obstetrics and Gynecology; Dr. J. L. Nicholson, Richlands, Physiology and Hygiene. (Annual meeting Asheville, N. C., June 9, 1909.)

The North Carolina State Board of Health—Dr. Geo. G. Thomas, President, Wilmington; Dr. Richard H. Lewis, Secretary-Treasurer, Raleigh; Dr. J. Howell Way, Waynesville; Dr. Thos. E. Anderson, Statesville; Dr. W. O. Spencer, Winston-Salem; Dr. E. C. Register, Charlotte; Dr. James A. Burroughs, Asheville; Dr. David T. Tayloe, Washington; Col. J. L. Ludlow, Civ. Eng., Winston-Salem.

Council on Medical Education of A. M. A.—Dr. Chas. J. O'H. Laughinghouse, Greenville; Dr. Kemp P. Battle, Jr., Raleigh; Dr. Chas. M. Strong, Charlotte.

Member National Legislative Council, A. M. A.—Dr. J. Howell Way, Waynesville.

Program of the Fifty-fifth Annual Meeting of the Medical Society of the State of North Carolina Held in Winston-Salem June 16, 17 and 18, 1908.

OFFICERS SESSION 1908.

President—J. HOWELL WAY, M.D.....Waynesville.
First Vice-President—J. E. STOKES, M.D.....Salisbury.
Second Vice-President—J. A. TURNER, M.D.....High Point.
Third Vice-President—NIXON EDWARDS, M.D.....Beaufort.
Secretary—D. A. STANTON, M.D.....High Point.
Treasurer—H. McKEE TUCKER, M.D.....Raleigh.

Committee on Arrangements—W. O. Spencer, Chairman; H. T. Bahnson, M.D., D. N. Dalton, M.D., J. L. Haines, M.D.

ENTERTAINMENT.

The ladies of Winston-Salem have arranged to give the Society a street car ride over the city and a supper at the Park. Cars will leave the Public Square at 5:30 p. m., Wednesday and after touring the city will arrive at the Park about 7 p. m. After supper has been served the Annual Oration and Essay will be delivered in the Pavilion.

ORDER OF EXERCISES.

TUESDAY MORNING, June 16th, 10 A. M. to 1:30 P. M.

Call to order by Chairman, Dr. W. O. Spencer.
Invocation by Rev. H. A. Brown, Winston.
Address of Welcome by Mayor O. B. Eaton, Winston.
Response to Address of Welcome by Dr. C. L. Pridgen, Kinston.
"The President's Annual Address," Dr. J. Howell Way, President, Waynesville.

Section on Anatomy and Surgery—Dr. Joshua Tayloe, Chairman, Washington.

1. "Diagnostic Value of Explanatory Incision, with Case Cited," Dr. Joshua Tayloe, Washington.
2. "Some Points on Minor Surgery," Dr. W. J. McAnally, High Point.
3. "Ligation of the Femoral Artery Eight Hours After Injury—Results," Dr. J. R. Paddison, Oak Ridge.
4. "Orthopedic Surgery," a Plea for the Crippled and Deformed Children of North Carolina, Dr. J. L. Haines, Winston.
5. "Some Practical Thoughts on Hernia," Dr. R. L. Payne, Norfolk, Va.

JUNE 16TH, 2:30 P. M.

House of Delegates called to order by the President in County Commissioners' Room.

6. "Mesenteric Thrombus Following Splenectomy," Dr. J. W. Long, Greensboro.

7. "Excision of the Coccyx," Dr. John R. Irwin, Charlotte.

8. "The Surgical Conscience," Dr. John C. Rodman, Washington.

9. "Etiology, Symptoms, Diagnosis and Treatment of Empyema with Report of Thoracotomy," Dr. J. T. Burrus, High Point.

10. "Hydrocele," Dr. E. C. Moore, Elm City.

11. "The General Practitioner as a Surgeon," Dr. Edmund Harrison, Greensboro.

12. "Traumatic Aneurism, with Report of a Case," Dr. J. B. Gibbs, Lexington.

13. "An Interesting Case of Gangrene," Dr. K. P. B. Bonner, Morehead City.

14. "Cancer as We View It To-day," Dr. W. O. Spencer, Winston-Salem.

15. "Coxa Vara," Dr. Wm. Moncure, Raleigh.

16. "Conservative Surgery," Dr. Joseph Akerman, Wilmington.

17. "The Value of Anti-operative Tests," Dr. C. M. Strong, Charlotte.

18. "An Interesting Case of Stone in the Bladder," Dr. James M. Parrott, Kinston.

19. "The Importance of Early Treatment of the Mastoid Complications of Middle Ear Disease," Dr. J. M. Lilly, Fayetteville.

20. "Abscess of the Brain," Dr. R. G. Buckner, Asheville.

21. "The Influence of the Constitutional Condition of the Patient on the Result of the Operation," Dr. Stuart McGuire, Richmond, Va.

22. "Carbuncle, its Etiology, Pathology and Treatment, Particularly the Latter," Dr. T. E. Anderson, Statesville.

23. "Endo-Aneurismorrhaphy," (Matas) Dr. Thos. M. Green, Wilmington.

24. "Appendicostomy in Amœbic Dysentery, Report of Cure," Dr. Brodie C. Nalle, Charlotte.

25. "Chondromata and Report of Case, Undergoing Malignant Degeneration," Dr. Eugene B. Glenn, Asheville.

TUESDAY, June 16th, 8:30 P. M.

"Memorial Services," Dr. C. A. Julian, Chairman Obituary Committee.

26. "In Memoriam, Patrick Livingston Murphy," Dr. R. H. Lewis, Raleigh.

"In Memoriam, Patrick Livingston Murphy," by Dr. G. G. Thomas, Wilmington.

27. "Life and Work of Dr. P. L. Murphy," by Dr. G. M. Cooper, Clinton.

28. "A Tribute to Dr. Joseph Graham," Dr. H. T. Bahnson, Winston-Salem.

WEDNESDAY, June 17th, 9 A. M.

Section on Practice—Dr. L. B. McBrayer, Chairman, Asheville.

29. "The Importance of the Work of the General Practitioner," Dr. L. B. McBrayer, Asheville.

30. "The Relation of the General Practitioner to Gynecology," Dr. J. E. Stokes, Salisbury.

31. "Obstetrical Work from the Standpoint of the General Practitioner," Dr. A. B. Croom, Maxton.

32. "The Relation of the General Practitioner to Surgery," Dr. T. E. W. Brown, Asheville.

33. "The Relation of the General Practitioner to the Ophthalmologist," Dr. Galliard S. Tennant, Asheville.

34. "Pain in the Abdomen and What It means to the General Practitioner," Dr. Henry F. Long, Statesville.

35. "Manners in the Sick Room," Dr. C. S. Jordan, Asheville.

36. "The Results of Surgery, as Seen by the General Practitioner, Not Being an Adverse Criticism," Dr. J. Allison Hodges, Honorary Member, Richmond, Va.

Conjoined Session State Board of Health, Wednesday 12 O'clock.
Dr. Richard H. Lewis, Secretary, Raleigh.

37. "Soil Pollution, With Special Reference to Hook Worm Disease," Dr. Charles Wardell Stiles, Chief Dept. Zoology, Washington, D. C.

38. "Milk Supplies in Relation to Public Health," Dr. Tait Butler, State Veterinarian, Raleigh.

Subsection on Pellagra—Dr. Edward J. Wood, Chairman, Wilmington.

39. "Pellagra, Its Nature, History and Appearance in This Country," Dr. Edward J. Wood, Wilmington.

40. "Pellagrous Insanity," Dr. John McCampbell, Morganton.

41. "Etiology and Pathology of Pellagra," Dr. C. L. Lavinder, U. S. P. H. and M. H. S.

Subsection on Tuberculosis in Collaboration with the North Carolina Association for the Prevention of Tuberculosis.
John Roy Williams, Chairman, Greensboro.

42. "Report of Cases Treated With Ichthyolated Emulsion Compound," Dr. John Roy Williams, Greensboro.

43. "Vaccine or Tuberculin Therapy in the Treatment of Tuberculosis," Dr. H. B. Weaver, Asheville.

44. "The Importance of Early Diagnosis in the Successful Treatment of Tubercular Affection," Dr. Daniel A. Dees, Bayboro.

45. "The Turn of the Tide of Tuberculosis Mortality," Dr. M. L. Stevens, Asheville.

46. "Our Greatest Need in the Successful Treatment of Tuberculosis," Dr. E. L. Stamey, Greensboro.

47. "Tuberculin Therapy," Dr. C. S. Grayson, High Point.

48. "Early Tuberculosis and Malaria, Their Differentiation," Dr. Paul H. Ringer, Asheville.

49. "The Importance of Regime in the Treatment of Tuberculosis," Dr. I. J. Archer, Black Mountain.

50. "Treatment of Incipient Tuberculosis," Dr. J. E. Brooks, Greensboro.

51. "The Use and Abuse of Drugs in Tuberculosis," Dr. W. M. Jones, High Point.

52. "Outdoor Life in the Treatment of Respiratory Troubles and Some Other Matters," Dr. Paul Paquin, Asheville.

53. "A Few Suggestions for Those Suffering from Tuberculosis," Dr. Wm. R. Kirk, Hendersonville.

54. "Diagnosis of Acute Miliary Tuberculosis," Dr. Silvio von Ruck, Asheville.

(At this point the North Carolina Association for the Prevention of Tuberculosis requests the floor for about ten minutes for the purpose of electing delegates to the National and International Association, announcements, etc.)

Subsection on General Diseases and Miscellaneous Papers.
Dr. Chas. B. Wilkerson, Chairman, Apex.

55. "The Necessity of Quarantine in Pneumonia," Dr. Chas. Wilkerson, Apex.

56. "Childhood with Its Exacting Cares and Responsibilities and Glorious Results," Dr. I. W. Faison Charlotte.

57. "Influenza," Dr. J. H. Merritt, Woodsdale.

58. "Acute Rheumatism," Dr. L. B. Young, Robbinsville.

59. "Report of a Case of Typhoid Cholecystitis," Dr. W. A. Graham, Durham.

60. "Venesection, its Indications and Uses as a Therapeutic Agent," Dr. Wm. Moncure Lyday, Penrose.

61. "Milk Sickness," Dr. J. A. Reagan, Weaversville.

62. "A Practical Study of Epilepsy," Dr. E. S. Warlick, Morganton.

63. "The Examiner's Golden Rules for Life Insurance Work," Dr. Albert Anderson, Raleigh.

64. "Reciprocity Between the State Examining Boards," Dr. A. A. Kent, Lenoir.

65. "The Role of Moral Trauma in Producing Physical Damage," Dr. R. S. Carroll, Asheville.

66. "Brights Disease, Hydrastis Treatment of," Dr. Francis Duffy, New Bern.

67. "A More Liberal Use of Hydrastis in Kidney Troubles," Dr. R. A. Whitaker, Kinston.

68. "Some Atypical Forms of Malaria," Dr. J. W. P. Smithwick, LaGrange.

69. "Treatment of Typhoid Fever," Dr. T. C. Quickel, Stanley.

70. "Epidemic of Malignant Cholera as Observed in the Philippine Islands," Dr. C. G. Bryant, Spruce Pine.

71. "Application of Dietetics in Acute and Chronic Intestinal Infections," Dr. Fenton B. Turck, Chicago, Ill.

72. "A New Method of Shortening an Ocular Muscle with Exhibition of Instruments," Dr. H. H. Briggs, Asheville.

73. "Early Recognition and Treatment of Toxic Amblyopia as Caused by the Abuse of Tobacco and Alcohol," Dr. Harry Honnett, Wilmington.

74. "Influenzal Arthritis," Dr. Jas. J. Philips, Tarboro.

75. "Perforation and Peritonitis Complicating Typhoid Fever," Dr. Edwin C. Register, Charlotte.

76. "Personal Views on the Treatment of Typhoid Fever," Dr. C. E. Reitzel, High Point.

77. "Aerostatic Deafness, its Etiology and Treatment," Dr. W. P. Reaves, Greensboro.

78. "To Be Rather Than Seem," Dr. N. C. Hunter, Rockingham.

79. "Report of a Cure—A Remarkable Case of Fever in a Pregnant Woman," Dr. Cyrus Thompson, Jacksonville.

WEDNESDAY EVENING, June 17th, 8:30.

(To which the public is invited.)

80. The Annual Oration: "The Physician and Education," Dr. Charles S. Mangum, Chapel Hill.

81. The Annual Essay: "The Lines of Progress in the Practice of Medicine," Dr. Thomas R. Little, Greensboro.

Section on Materia Medica and Therapeutics—Dr. L. N. Glenn, Chairman, McAdensville.

82. "The Rational Trend of Modern Therapeutics," Dr. L. N. Glenn, McAdensville.

83. "Cathartics," Dr. M. A. Royall, Yadkinville.

84. "The Importance of Proper Dosage in the Administration of Quinine," Dr. Parran Jarboe, Greensboro.

85. "Normal Salt Solution, Its Use and Method of Administration," Dr. C. A. Woodard, Durham.

86. "A Brief Report of Some Cases Which Have Yielded Surprisingly to X-Ray Treatment Aided by Snow's Tubes and Mechanical Vibration," Dr. J. Thomas Wright, Winston-Salem.

87. "Anesthetics," Dr. Southgate Leigh, Norfolk, Va.

88. "Adrenalin Chloride, Its Use in Medicine," Dr. C. O. Abernethy, Raleigh.

89. "The Use and Abuse of Morphine and Kindred Drugs," Dr. D. A. Garrison, Bessemer City.

90. "Therapeutics an Art," Dr. W. H. Boone, Morrisville.

91. "A Plea for Fewer and Simpler Remedies," Dr. John Hill Tucker, Henderson.

Section on Gynecology and Abdominal Surgery—Dr. J. F. Highsmith, Chairman, Fayetteville.

92. "A Plea for Early Operation in Appendicitis When the Diagnosis is Obscure," Dr. J. F. Highsmith, Fayetteville.

93. "Hysterectomy With Report of a Case," Dr. Rigdon O. Dees, Greensboro.

94. "Surgery of the Stomach," Dr. W. F. Faison, Jersey City, N. J.

95. "Imperforate Hymen with Report of a Case," Dr. S. C. Highway, Murphy.

96. "Diagnosis and Treatment of Ectopic Gestation from the Standpoint of a Country Doctor, with Report of Case," Dr. G. F. Duncan, High Point.

Section on Obstetrics—Dr. Chas. T. Harper, Chairman, Wilmington.

97. "The Management of Pregnancy," Dr. Charles T. Harper, Chairman, Wilmington, N. C.

98. "Demand for Early Surgical Interference in Pernicious Vomiting of Pregnancy," Dr. J. A. Williams, Greensboro.

99. "Placenta Proesia," Dr. H. B. Hiatt, Clinton.

100. "Chloroform in Labor," Dr. J. Steven Brown, Hendersonville.

101. "Eclampsia," Dr. John A. Ferrell, Kenansville.

102. "Tubal Pregnancy," Dr. Owen Smith, Asheville.

103. "Puerperal Eclampsia," Dr. C. M. Pool, Salisbury.

104. "Puerperal Eclampsia," Dr. E. F. Strickland, Bethania.

105. "Some Obstetrical Monstrosities in a Country Practice," Dr. Gibson L. Sykes, Salemburg.

106. "Management of Freak Presentations," Dr. W. F. Mitchell, Shelby.

107. "The Things That Kill Women in Childbearing, and How and Why," Dr. H. Stewart, Monroe.

108. "Management of Labor," Dr. J. W. McGehee, Reidsville.

109. "Hydatidiform Mole, with Report of a Case," Dr. J. B. Cranmer, Wilmington.

110. "Cæsarean Section with Report of Cases," Dr. H. McKee Tucker, Raleigh.

111. "History of Cure of Hydatidiform Mole," Dr. J. M. Williams, Warsaw.

112. "The Management of the Third Stage of Labor," Dr. B. R. Graham, Wallace.

Section on Pædiatrics—Dr. W. W. McKenzie, Chairman, Salisbury.

113. "Maternal Nursing," Dr. W. W. McKenzie, Salisbury.

114. "An Artificial Food Suitable for Young Infants," Dr. Chas. Roberson, Greensboro.

115. "Scarlatiniform Eruption," Dr. J. S. Brown, Hendersonville.

116. "Pneumonia in Children," Dr. J. A. Turner, Hight Point.

117. "Iliocolitis," Dr. H. L. Mock, Spencer.

118. "Diphtheria and a Word for Antitoxin," Dr. E. M. Hutchens, Boonville.

119. "Adenoids in Children, Etiology, Symptoms and Sequelæ," Dr. J. B. Wright, Lincolnton.

120. "Post-scarlatinal Nephritis," Dr. W. J. Meadows, Greensboro.

121. "Acute Gastro-intestinal Intoxication Without Diarrhœa in Children," Dr. S. A. Wilkins, Gastonia.

122. "Pleurisy in Children," Dr. J. R. McCracken, Waynesville.

123. "Clinical Report of a Case of Pseudo-leucocythemia Infantum," Dr. W. M. Jones, High Point.

Section on Physiology and Chemistry—Dr. E. T. Dickinson, Chairman, Wilson.

124. "Artificial Interruption of the Physiological Circulation as a Therapeutic Measure," Dr. E. T. Dickinson, Wilson.

125. "The Physiology of the Kidney and the Essential Examination of the Urine," Dr. I. W. Lamm, Lucama.

126. "The Importance of a Thorough Knowledge of Biology, Bacteriology and of the Circulation of the Blood for the Successful Application of Serum Therapy," Dr. J. C. Grady, Kenly.

127. "The Necessity of Chemical Examination of the Stomach Contents in Gastro-intestinal Diseases," Dr. C. W. Moseley, Greensboro.

128. "The Relation of the Laboratory to the General Practitioner," Dr. Watson S. Rankin, Wake Forest.

129. "Toxic Changes from Prolonged Use of Acetanilid," Dr. H. H. Clapp, Winston.

Section on Railway Surgery—Dr. C. A. Julian, Chairman, Thomasville.

130. "Railway Surgery," Dr. C. A. Julian, Thomasville.

131. "The Railway Surgeon and What is Expected of Him by This Company," Dr. W. A. Applegate, Chief Surgeon Southern Railway, Washington, D. C.

132. "Lacerations of the Hand," Dr. Robert S. Young, Concord.

133. "Conservatism in Railway Surgery," Dr. W. P. Whittington, Asheville.

134. Subject to be announced, Dr. J. T. J. Battle, Greensboro.

135. Subject to be announced, Dr. Geo. G. Thomas, Wilmington.

Section on Pathology and Microscopy—Dr. Ben K. Hays, Chairman, Oxford.

136. "Metchnikoff's Theory of Old Age," Dr. Ben K. Hays.

SYNOPOSIS OF THE TRANSACTIONS

OF THE

Medical Society of the State of North Carolina

FIFTY-FIFTH ANNUAL MEETING

Winston-Salem, N. C., June 16, 17, 18, 1908.

The fifty-fifth annual meeting of the North Carolina Medical Society met in the Forsyth County court-house at Winston-Salem, on the 16th day of June, at 10:30 a. m., 1908, the Society remaining in session for three days.

Three hundred and seventy-two members registered, making this the largest gathering in the history of the organization, except the Charlotte session of 1906, which registered thirty-four more.

The Convention was called to order by Dr. W. O. Spencer, Chairman of the Local Committee of Arrangements.

Rev. H. A. Brown, D.D., delivered the divine invocation.

Dr. Spencer then introduced to the Society the Mayor of Winston, the Hon. O. B. Eaton, who, in a strong address, warmly welcomed the Society, singly and collectively, and turned over to them the keys of the city.

Dr. Pridgen, of Kinston, on behalf of the Society, responded to the Mayor's address, warmly thanking him and the Forsyth County Medical Society for their generous welcome, and then gave an interesting sketch of the old town of Salem, from the time it was a cross-roads to the present time.

At the conclusion of Dr. Pridgen's address, Dr. Spencer introduced to the Society its President, Dr. J. Howell Way, of Waynesville, for four years the Secretary of the organization.

Dr. Way, in his address, briefly outlined the early struggles of the Society and touched upon the history and growth of the organization, which, from a mere handful of members

fifty-five years ago, has become the splendid organization which it now is, numbering upon its membership roll nearly thirteen hundred men. The President's address showed years of study, observation and careful research and is of interest and value to the members of the Society.

Dr. Burroughs, at the close of the President's address, said: *Mr. President:* I wish to move that our Secretary appoint a committee of three, to report at some future time on the President's address, during the meeting.

Dr. Weaver: I believe it is customary for the President's address to be referred to the House of Delegates for future consideration. I move, therefore, that it be referred to the House of Delegates, where a special committee will be appointed for the consideration of the address.

Dr. Burroughs: I don't think that is the way, exactly, it should be done. I accept your amendment, though.

The President: Without objection the President's address is referred to the House of Delegates.

Gentlemen, we will now proceed to the consideration of the Section of Anatomy and Surgery, Dr. Joshua Tayloe, of Washington, N. C., Chairman.

"Diagnostic Value of Exploratory Incision, With Case Cited," Dr. Joshua Tayloe. (Paper read.)

Dr. Parrott: *Mr. President:* As this paper is included in the section of surgery, I move that the courtesy of the floor be extended to Dr. Stuart McGuire, of Richmond, our distinguished visitor. Motion carried.

"Some Points of Minor Surgery," Dr. W. J. McAnally, High Point. (Read by title.)

"Ligation of the Femoral Artery Eight Hours After Injury—Results," Dr. J. R. Paddison, Oak Ridge. (Read.)

Discussed by Drs. Parrott, Kent and J. P. Turner.

"Orthopædic Surgery, a Plea for the Crippled and Deformed Children of North Carolina," Dr. J. L. Haines, of Winston. (Read.)

Discussed by Dr. Whittington.

"Some Practical Thoughts on Hernia," Dr. R. L. Hayne, Norfolk, Va. (Read.)

Discussed by Drs. McGuire, Weaver and M. Bolton.

Society here took a recess until 2:30 p. m.

TUESDAY AFTERNOON, June 16th.

Convention called to order by the President, Dr. Way.

The initial paper of the afternoon was read by Dr. J. W. Long, of Greensboro—"Mesenteric Thrombus Following Splenectomy."

The President here resigned the chair to Dr. J. E. Stokes, Vice-President, as it was necessary for him to attend a meeting of the House of Delegates.

Dr. Long's paper discussed by Dr. W. S. Rankin, of Wake Forest.

DR. WILLIAMS: Would it be in order for the Board of Examiners to make a report now?

The Chairman put the motion to the Society, and it was carried.

Dr. Sikes read the report of the State Board of Medical Examiners.

CHAIRMAN: What shall we do with the report, gentlemen?

DR. WILLIAMS: I move that it be received. Motion carried.

"Excision of the Coccyx," Dr. John R. Irwin, Charlotte. (Read by title.)

"The Surgical Conscience," Dr. John C. Rodman, Washington, D. C. (Read.)

Discussed by Drs. Francis Duffy and J. A. Williams.

"Etiology, Symptoms, Diagnosis and Treatment of Empyemia, with Report of Thoractomy," Dr. J. T. Burrus, High Point. (Read.)

Discussed by Drs. Rodman, Burroughs, J. F. McKay and L. A. Crowell.

"Hydrocele," Dr. E. C. Moore, Elm City, N. C. (Read.)

Discussed by Drs. McGuire and J. W. Long.

"The General Practitioner as a Surgeon," Dr. Edmund Harrison, Greensboro, N. C. (Read.)

"Traumatic Aneurism, with Report of a Case," Dr. J. B. Gibbs, Lexington, N. C. (Read by title.)

"An Interesting Case of Gangrene," Dr. K. P. B. Bonner, Morehead City, N. C. (Read.)

"Cancer as We View It To-day," Dr. W. O. Spencer, Winston, N. C. (Read by title.)

"Coxa Vera," Dr. Wm. Moncure, Raleigh, N. C. (Read.)

"Conservative Surgery," Dr. Joseph Akerman, Wilmington, N. C. (Read.)

"The Value of Ante-operative Tests," Dr. C. M. Strong, Charlotte. (Read by title.)

"An Interesting Case of Stone in the Bladder," Dr. James M. Parrott, Kinston, N. C. (Read.)

"The Importance of Early Treatment of the Mastoid Complications of Middle Ear Disease," Dr. J. M. Lilly, Fayetteville, N. C. (Read.)

"Abscess of the Brain," Dr. R. G. Buckner, Asheville, N. C. (Read.)

"The Influence of the Constitutional Condition of the Patient on the Results of the Operation," Dr. Stuart McGuire, Richmond, Va. (Read.)

Discussed by Dr. Whittington.

"Carbuncle, Its Etiology, Pathology and Treatment, Particularly the Latter," Dr. T. E. Anderson, Statesville, N. C. (Read.)

Dr. Wood: Before we discuss this paper, I desire to say that I take great pleasure in announcing to the Society that we have with us Dr. C. L. Lavinder, of the U. S. P. H. and M. H. Service, who is stationed in Wilmington, and I move that he be given the privileges of the floor.

The Society extends invitation to all visitors to participate in the discussions.

Dr. Anderson's paper discussed by Drs. McGuire, M. F. Fox, and Weaver.

"Endo-aneurismorrhaphy," (Matas), Dr. Thos. M. Green, Wilmington, N. C.

Discussed by Dr. Lavinder.

"Appendicostomy in Amœbic Dysentery, Report of a Cure," Dr. Brodie C. Nalle, Charlotte, N. C. (Read by title.)

The Society here took a recess until 8:30 Tuesday evening.

MEMORIAL SERVICES.

TUESDAY EVENING, June 16th.

President called the Society to order at 8:30 p. m., for the Memorial meeting, introducing Dr. Julian, Chairman of the Obituary Committee, who read his report:

Papers bearing on this subject by Drs.—

R. H. Lewis—"In Memoriam, Patrick Livingston Murphy."

R. G. Thomas—"In Memoriam, Patrick Livingston Murphy."

G. M. Cooper, Clinton—"Life and Works of Dr. P. L. Murphy."

A. W. Knox—"Memorial, Dr. P. L. Murphy."

H. T. Bahnson—"A Little Tribute to Dr. Joseph Graham."

DISCUSSION.

DR. MARSH, DR. SIKES: Will the chair entertain a motion here to-night in regard to Dr. Murphy's life and the Transactions?

THE PRESIDENT: With pleasure.

DR. SIKES: As Dr. Murphy was originally from our county, and I represent that county at this meeting, I would like the Chair to entertain this proposition: that a photo-

graph of Dr. Murphy be put in the Transactions along with the minutes of this meeting.

The President: Without objection that will take the usual order of business such as this, and be referred, without debate, to the House of Delegates, which will, without doubt, act upon the advice.

The suggestion approved by Drs. K. G. Averitt and Rose.

Dr. Ben K. Hays asked that a motion be entertained providing that the papers read at the Memorial Service be printed in the leading daily papers of the State on Sunday. Motion carried.

Dr. Marsh: *Mr. President:* The State Board of Health will meet immediately in room 204 at the Zinzendorf Hotel.

The President instructed the Secretary to make a note of the motion just passed and to see that the Sunday papers were provided with the memorial tributes.

The President here announced that the House of Delegates would meet in the Municipal Building in the City Hall at 8:30 sharp, Wednesday morning, and that the general meeting would come to order in the court-house at 9 o'clock. Also that the election of the Board of Examiners would take place at 10, Wednesday morning, in the general session.

Convention here took a recess until 9 o'clock Wednesday morning.

Wednesday Morning, June 17th.

In the absence of the President in attendance on the House of Delegates, the Convention was called to order by Dr. C. A. Julian, Vice-President.

First paper read by Dr. Eugene B. Glenn, of Asheville, "Enchondromata and Report of Case Undergoing Malignant Degeneration."

"The Importance of Work of the General Practitioner," Dr. L. B. McBrayer, Asheville, N. C. (Read.)

The President, Dr. Way, resumed the chair at 10 o'clock and made the following announcement:

Gentlemen, the hour for the special order of the election of the Board of Medical Examiners has arrived, and I now announce that the duty is before you.

The Sanitary Engineer of Winston-Salem here extended an invitation to the members of the Association to inspect the waterworks and especially the new system of filtration.

Dr. J. Roy Williams, of Greensboro, sought at this juncture to present a matter from the Guilford County Medical Society, but was overruled as being out of order, on account of the matter of the election of the Medical Examiners being before the Society.

The election of the Board of Examiners was gone into. Short nominating speeches, of two minutes each, were made by Drs. Turner, Duffy, Lewis, Albert Anderson, Monroe, C. W. Mosley, Nicholson, Weaver, Stanton, Crowell of Lincolnton, Thomas, Monk, Dickerson, Stevens, Lockett, A. B. Croom, Harris, Booth, Cranmer, J. E. Brooks, Burns, John Roy Williams, A. S. Rose, Glenn of Asheville, Harper and Long.

Doctors Nicholson, Dodson, McKenzie, Hays and McBrayer were elected on the first ballot. Dr. Rodman being the only one receiving a sufficient number of votes to elect, on the second ballot, it was decided that on the third ballot the nominee receiving the highest number of votes should be considered as elected. On this ballot Dr. Bynum was elected.

The Society then took a recess until 3 o'clock, on motion of Dr. Lewis.

Wednesday Afternoon, June 17th.

The President called the Society to order at 3 o'clock, and introduced Dr. Thomas, President of the State Board of Health. The conjoint meeting of the Society and the State Board of Health was held, Dr. Thomas presiding.

Dr. Richard H. Lewis, Secretary of the State Board of Health, read his report.

Dr. Thomas introduced Dr. Charles Wardell Stiles, Chief of the Department of Zoology, Washington, D. C., who read a paper entitled, "Soil Pollution, With Reference to Hook Worm Disease."

Dr. Stiles's paper discussed by Drs. Julian and Lewis.

Paper read by Dr. Tait Butler, State Veterinarian, Raleigh, entitled "Milk Supplies in Relation to Public Health."

Discussed by Drs. Von Ruck and Burroughs.

The section of "Pellagra" was next taken up, papers being read as follows:

"Pellagra, Its Nature, History and Appearance in This Country," Dr. Edward J. Wood, Wilmington, N. C.

"Pellagrous Insanity," Dr. John McCampbell, Morganton.

Dr. Sikes here arose to introduce a motion of order in the house, and was seconded by Dr. Rankin.

Dr. Jewett, on behalf of the Local Committee of Arrangements, announced that the ladies would have a supper at the park that night, and that tickets were at the disposal of any one who desired to attend.

Paper read by Dr. Lavinder, U. S. P. H. and M. H. S., entitled "Etiology and Pathology of Pellagra."

The foregoing papers on Pellagra discussed by Drs. Whittington, I. M. Taylor, Stiles, and W. S. Rankin.

Dr. Dalton: I would like to make the announcement that we have a supper over at Nissen Park, prepared for the Society, which will be ready at seven-thirty, and as soon as you adjourn you can take the cars going south at once.

Dr. Thomas: It is not necessary for me to repeat such a pleasant invitation as that. I am sure it will appeal to you. If there is no more business before the conjoint session, we will now adjourn. The conjoint session is now adjourned.

The President: Dr. Way, *Gentlemen:* It is moved and seconded that this Society take a recess until the con-

clusion of the supper at the park to-night, at which time the annual oration and annual essay will be delivered.

The Society now stands adjourned.

The members of the Society took the cars to Nissen Park, where an elegant supper was served by the ladies of the Hospital Committee. The dining room was beautifully decorated with a profusion of cut flowers, and music was rendered during the repast by the Winston band. Needless to say this was one of the most enjoyable events of the three days' meeting of the Society.

Dr. J. Allison Hodges, of Richmond, Va., honorary member, and a North Carolinian, was pressed for a speech, which he made at the conclusion of the supper, in his usual happy style.

The Society met at the pavilion at the park at 8:30, and was called to order by the President, Dr. Way, who introduced Dr. Charles S. Mangum, of Chapel Hill, the orator.

Dr. Mangum delivered the annual oration, "The Physician and Education," and was much applauded at its conclusion.

The President introduced Dr. Thomas R. Little, of Greensboro, who read the annual essay, "The Lines of Progress in the Practice of Medicine." This essay was also heartily applauded.

The President made a little speech, thanking the ladies for their presence, and introduced Dr. Lewis, Secretary of the State Board of Health, who regaled the crowd with several funny stories, much to their delight.

The President adjourned the meeting, and asked the Society to reassemble at the place of meeting at the court-house, Thursday morning, at 9 o'clock.

THURSDAY MORNING, June 18th.

Society called to order by the President.

Dr. Frank Duffy asked to present a resolution on behalf of Dr. J. A. Reagan, one of the Society's oldest members; that the Society regretted his illness, which prevented his being present at the meetings, and that it sympathized with him in his affliction.

The resolution was adopted.

First paper on the morning's program read by Dr. J. E. Stokes, of Salisbury, "The Relation of the General Practitioner to Gynecology."

This paper was discussed by Dr. Weaver.

Motion made by Dr. J. T. J. Battle that a committee of three be appointed to confer with the Publication Committee of the Society "in regard to some apparent discrepancies in the different prints of the Constitution and By-Laws of the Society."

Drs. Fletcher, Battle and Kent appointed on this committee, Dr. Kent being made chairman of the same.

Dr. Turner here brought up a matter from the Guilford County Medical Society in regard to an alleged "unethical" advertisement in the Charlotte *Medical Journal,* which was referred by the President to the Council.

The President filled the vacancies of the Council, and it was requested to sit and hear the matter, in the presence of the assembly. Dr. I. M. Taylor, of Morganton, was elected President of the Council. Dr. Parrott was asked to serve, but was too unwell to do so. The personnel of the Council was as follows: Dr. I. M. Taylor, President; Dr. Sam Stevens, Secretary; Drs. Chas. O. H. Laughinghouse, Chas. T. Harper, E. T. Dickerson, J. F. Highsmith, L. B. McBrayer and A. W. Knox.

The matter was discussed at length by the various members of the Council, Drs. Williams, Beall, Long and Turner, of the Guilford County Medical Society; and Dr. Bahnson, who

finally submitted a resolution to the Society that the Charlotte *Medical Journal* should offer explanation and apology for the "unethical" advertisement. This resolution was finally adopted by the Society.

The consideration of regular program resumed.

"Obstetrical Work, From the Standpoint of the General Practitioner." (Read by Dr. J. A. Croom, of Maxton.)

"The Relation of the General Practitioner to Surgery," Dr. T. E. W. Brown, of Asheville. (Read by title.)

"The Relation of the Laboratory to the General Practitioner." (Read by Dr. Watson S. Rankin, of Wake Forest.)

Discussed by Dr. Fletcher, of Asheville.

"The Relation of the General Practitioner to the Opthalmologist," Dr. Gaillard S. Tennant, Asheville, N. C. (Read by title.)

"Pain in the Abdomen and What It Means to the General Practitioner," Dr. Henry F. Long, Statesville, N. C. (Read by title.)

"Manners in the Sick Room," Dr. C. S. Jordan, Asheville, N. C. (Read by title.)

Upon motion of Dr. Rankin, the Convention took a recess until 3 p. m.

THURSDAY AFTERNOON, June 18th.

First paper on the program:

"The Results of Surgery as Seen by the General Practitioner, Not Being an Adverse Criticism," Dr. J. Allison Hodges, Richmond, Va.

Discussed by Drs. Highsmith and Joseph Graham.

Upon motion of Dr. Haines, a vote of thanks was extended by the Society to Dr. Hodges for his most excellent and timely paper.

"Report of a Case Treated with Ichthyolated Emulsion Compound," Dr. John Roy Williams, Greensboro. (Read by title.)

"Vaccine or Tuberculin Therapy in the Treatment of Tuberculosis," Dr. H. B. Weaver, Asheville, N. C. (Read.)

Motion by Dr. Wm. A. Grier that all papers on the same subject as Dr. Weaver's be discussed together, after all are read.

Motion carried.

"The Importance of Early Diagnosis in the Successful Treatment of Tubercular Affection," Dr. Daniel A. Dees, Bayboro. (Read by title.)

"The Turn of the Tide of Tuberculosis Mortality," Dr. M. L. Stevens, Asheville. (Read by title.)

"Our Greatest Need in the Successful Treatment of Tuberculosis," Dr. E. L. Stamey, Greensboro. (Read by title.)

"Tuberculin Therapy," Dr. C. S. Grayson, High Point. (Read by title.)

"Early Tuberculosis and Malaria, Their Differentiation," Dr. Paul H. Ringer, Asheville. (Read by title.)

"The Treatment of Incipient Tuberculosis," Dr. J. E. Brooks, Greensboro. (Read.)

"The Use and Abuse of Drugs in Tuberculosis," Dr. W. M. Jones, High Point. (Read.)

"Outdoor Life in the Treatment of Respiratory Troubles and Some Other Matters," Dr. Paul Paquin, Asheville. (Read by title.)

"A Few Suggestions for Those Suffering from Tuberculosis," Dr. Wm. R. Kirk, Hendersonville. (Read by title.)

"Diagnosis of Acute Miliary Tuberculosis," Dr. Silvio von Ruck, Asheville. (Read by title.)

"The Necessity of Quarantine in Pneumonia," Dr. Chas. Wilkerson, Apex. (Read by title.)

The President: *Gentlemen:* I believe it is now in order to call for discussions on the tuberculosis papers that have just been read. Is there any discussion of these papers?

Discussions by Doctors Stiles, Dunn, Brooks and Weaver.

"Childhood, With Its Exacting Cares and Responsibili-

ties and Glorious Results," Dr. I. W. Faison, Charlotte, N. C. (Read by title.)

"Influenza," Dr. J. H. Merritt, Woodside. (Read by title.)

"Acute Rheumatism," Dr. L. B. Young, Robbinsville. (Read by title.)

"Report of a Case of Typhoid Cholecystitis," Dr. W. A. Graham, Durham. (Read.)

Discussed by Dr. Highsmith.

"Venesection, Its Indications and Uses as a Therapeutic Agent," Dr. Wm. Lyday, Penrose, N. C. (Read by title.)

"Milk Sickness," Dr. J. A. Reagan, Weaversville, N. C. (Read by title.)

"A Practical Study of Epilepsy," Dr. E. S. Warlick, Morganton, N. C. (Read by title.)

"The Examiner's Golden Rules for Life Insurance Work," Dr. Albert Anderson, Raleigh. (Read by title.)

"Reciprocity Between the State Examining Boards," Dr. A. A. Kent, Lenoir. (Read by title.)

"The Role of Moral Trauma in Producing Physical Damage," Dr. R. S. Carroll, Asheville, N. C. (Read by title.)

"Bright's Disease; Hydrastis in the Treatment of," Dr. Francis Duffy, New Bern. (Read.)

"A More Liberal Use of Hydrastis in Kidney Troubles," Dr. R. A. Whitaker, Kinston, N. C. (Read by title.)

"Some Atypical Forms of Malaria," Dr. J. W. P. Smithwick, LaGrange. (Read by title.)

"Treatment of Typhoid Fever," Dr. T. C. Quickel, Stanley. (Read by title.)

"Epidemic of Malignant Cholera as Observed in the Philippine Islands," Dr. C. G. Bryant, Spruce Pine. (Read by title.)

"Application of Dietetics in Acute and Chronic Intestinal Infections." (Read by title.)

"A New Method of Shortening an Ocular Muscle, With

Exhibition of Instruments," Dr. H. H. Briggs, Asheville. (Read by title.)

"Early Recognition and Treatment of Toxic Amblyopia as Caused by the Abuse of Tobacco and Alcohol," Dr. Henry Honnett, Wilmington. (Read by title.)

"Influenzal Arthritis," Dr. James J. Philips, Tarboro, N. C. (Read.)

The President: I have to offer apologies to the doctor and the Society for not inviting discussion of his paper. The small numbers and the growing lateness make it necessary that I now request the Secretary to make a report from the House of Delegates.

(Report read. See index for report.)

Telegrams received from Drs. Southgate Leigh, of Norfolk, and David Tayloe, of Washington, expressing their regrets at their inability to be present at the meeting. Also telegrams from the Chamber of Commerce and from the Mayor of the city of Wilmington, inviting the Association to meet at Wrightsville Beach next year.

The President, in a little speech to the Society, thanked them for their kindness and support during the past year, and expressed his appreciation of the honor of being their President, and requested Drs. A. W. Knox and H. B. Weaver, two ex-Presidents, to escort the President-elect, Dr. J. F. Highsmith, to the chair.

Dr. Knox replied to the President, warmly eulogizing his efficiency, and then with Dr. Weaver escorted the President-elect to the chair. Dr. Highsmith was presented to the President by Dr. Weaver.

The President then introduced the President-elect to the Society and retired from the chair.

Dr. Highsmith made a brief speech of acceptance, in which he warmly thanked the Association for the unexpected honor, and asked the individual support of the members during his year of office.

Dr. Weaver moved that the remaining papers be read by

title, as it was late, and the remaining members desired to leave for their homes. This motion was carried.

The other papers read by title are as follows:

"Perforation and Peritonitis Complicating Typhoid Fever," Dr. Edwin C. Register, Charlotte.

"Personal Views on the Treatment of Typhoid Fever," Dr. C. E. Reitzel, High Point.

"Aerostatic Deafness, Its Etiology and Treatment," Dr. W. P. Reaves, Greensboro.

"To Be Rather Than Seem," Dr. N. C. Hunter, Rockingham.

"The Rational Trend of Modern Therapeutics," Dr. L. N. Glenn, McAdensville.

"Cathartics," Dr. M. A. Royall, Yadkinville.

"The Importance of Proper Dosage in the Administration of Quinine," Dr. Parran Jarboe, Greensboro.

"Normal Salt Solution, Its Use and Method of Administration," Dr. C. A. Woodard, Durham.

"A Brief Report of Some Cases Which Have Yielded Surprisingly to X-Ray Treatment Aided by Snow's Tubes and Mechanical Vibration," Dr. J. Thomas Wright, Winston-Salem.

"Anesthetics," Dr. Southgate Leigh, Norfolk, Va.

"Adrenalin Chloride, Its Use in Medicine," Dr. C. O. Abernethy, Raleigh.

"The Use and Abuse of Morphine and Kindred Drugs," Dr. D. A. Garrison, Bessemer City.

"Therapeutics an Art," Dr. W. H. Boone, Morrisville.

"A Plea for Fewer and Simpler Remedies," Dr. John Hill Tucker, Henderson.

"A Plea for Early Operation in Appendicitis When the Diagnosis is Obscure," Dr. J. F. Highsmith, Fayetteville.

"Hysterectomy With Report of a Case," Dr. Rigdon O. Dees, Greensboro.

"Surgery of the Stomach," Dr. W. F. Faison, Jersey City, N. J.

"Imperforate Hymen With Report of a Case," Dr. S. C. Highway, Murphy.

"Diagnosis and Treatment of Ectopic Gestation From the Standpoint of a Country Doctor, With Report of Case," Dr. G. F. Duncan, High Point.

"Demand for Early Surgical Interference in Pernicious Vomiting of Pregnancy," Dr. J. A. Williams, Greensboro.

"The Things That Kill Women in Childbearing, and How and Why," Dr. H. D. Stewart, Monroe.

"Management of Labor," Dr. J. W. McGehee, Reidsville.

"Puerperal Eclampsia," Dr. E. F. Strickland, Bethania.

"Hydatidiform Mole, With Report of a Case," Dr. J. B. Cranmer, Wilmington.

"Cæsarean Section With Report of Case," Dr. H. McKee Tucker, Raleigh.

"History of a Case of Hydatidiform Mole," Dr. J. M. Williams, Warsaw.

"The Management of the Third Stage of Labor," Dr. B. R. Graham, Wallace.

"Maternal Nursing," Dr. W. W. McKenzie, Salisbury.

"An Artificial Food Suitable for Young Infants," Dr. Chas. Roberson, Greensboro.

"Scarlatiniform Eruption," Dr. J. S. Brown, Hendersonville.

"Pneumonia in Children," Dr. J. A. Turner, High Point.

"Ileo-colitis," Dr. H. L. Monk, Spencer.

"Diphtheria and a Word for Antitoxin," Dr. E. M. Hutchens, Boonville.

"Adenoids in Children, Etiology, Symptoms and Sequelæ," Dr. J. B. Wright, Lincolnton.

"Post-scarlatinal Nephritis," Dr. W. J. Meadows, Greensboro.

"Acute Gastro-intestinal Intoxication Without Diarrhœa in Children," Dr. S. A. Wilkins, Gastonia.

"Pleurisy in Children," Dr. J. R. McCracken, Waynesville.

"Clinical Report of a Case of Pseudo-leucocythemia Infantum," Dr. W. M. Jones, High Point.

"Artificial Interruption of the Physiological Circulation as a Therapeutic Measure, Dr. E. T. Dickinson, Wilson.

"The Physiology of the Kidney and the Essential Examination of the Urine," Dr. I. W. Lamm, Lucama.

"The Importance of a Thorough Knowledge of Biology, Bacteriology and of the Circulation of the Blood for the Successful Application of Serum Therapy," Dr. J. C. Grady, Kenly.

"The Necessity of Chemical Examination of the Stomach Contents in Gastro-intestinal Diseases," Dr. C. W. Moseley, Greensboro.

"The Relation of the Laboratory to the General Practitioner," Dr. Watson S. Rankin, Wake Forest.

"Toxic Changes From Prolonged Use of Acetanilid," Dr. H. H. Kapp, Winston.

"Railway Surgery," Dr. C. A. Julian, Thomasville.

"The Railway Surgeon and What Is Expected of Him by This Company," Dr. W. A. Applegate, Chief Surgeon Southern Railway, Washington, D. C.

"Lacerations of the Hand," Dr. Robt. S. Young, Concord.

"Conservatism in Railway Surgery," Dr. W. P. Whittington, Asheville.

Subject to be announced, Dr. J. T. J. Battle, Greensboro.

Subject to be announced, Dr. Geo. G. Thomas, Wilmington.

"Metchnikoff's Theory of Old Age," Dr. Ben K. Hays, Oxford.

Dr. R. D. Jewett at this juncture offered a motion that three members be appointed to look into the advisability of publishing the Minutes of the Society in a monthly journal, to be owned by that body, instead of in the bound Transactions, as heretofore. Seconded, and urged by Dr. Whittington and others.

Dr. Way made a motion that the Society adjourn, which was seconded by Dr. Weaver. This was opposed by Dr. Whittington, and insisted upon by Dr. Way, for the reason that as a business matter it properly came before the House of Delegates, which had adjourned, and besides almost everybody had left the meeting, and the few remaining members should not take action upon so important a matter without the sanction of the rest of the Society.

The President requested all who were in favor of adjourning to rise, and, upon counting those who were standing, it was found that fifteen were in favor of adjourning, while thirteen retained their seats. The majority being in favor of adjourning, the President declared the meeting adjourned *sine die*.

OPENING INVOCATION

By Rev. Dr. H. A. Brown, Winston, N. C.

We lift up our hearts in humble petition and in gratitude to thee, our Heavenly Father, that thou hast granted us the privilege of gathering together again in this annual meeting. And now we beg that thy benediction and blessing may abide with us all. Mayest thou preside over us as the Great Physician, and may the meeting of this profession be for the welfare of the people of our beloved State.

We thank thee for the wonderful progress in medical science that has been reached by thy people, and we pray thee, O Lord, that thou wilt continue to bless these who are engaged in this noble profession, and give them that measure of success that will redound to thy glory and to the welfare of thy people.

We ask thee, O gracious Lord, that thou wilt take each one of these men and make him an instrument in thy hand for the furtherance of thy cause upon the earth. O thou, who wast thyself the Great Physician when upon the earth, who didst heal the diseases of the body, as well as of the soul, wilt thou put thy loving hand upon each one of these men and make them a blessing wherever they may be. Grant that these men, as they come in and out of our homes, may have an influence for good in our families and our communities.

We pray that thou wilt bless them while they are within our gates and grant them a safe return to their people.

O Lord, save us and bless us. Make this meeting a great power for good, and as these men shall confer, one with another, and read their papers, may greater light come into their minds, and may each of them go back home the better prepared to meet with the trials and with the great questions that shall present themselves to them.

Bless us all together, for Jesus' sake. Amen.

ADDRESS OF WELCOME

By Hon. O. B. Eaton, Mayor of Winston-Salem.

Mr. President, Officers and Members of the North Carolina Medical Society, Ladies and Gentlemen:

It is with emotions such as I have never experienced upon any former occasion that I greet you at this, your annual meeting, and extend to you, on behalf of the whole people of our city, a most cordial and hearty welcome, coupled with the wish that one and all shall feel that it is meet and proper to be here, and that the work of your organization shall have been strengthened and advanced by your deliberations.

You have met here to review the events of the past year affecting your organization, to note its progress, to counsel and advise with one another how you can best serve and promote its interests, properly widen and enlarge its sphere of usefulness, so that the Society and individuals may have the highest development and the largest allotment of human happiness.

We have many times had the pleasure of entertaining distinguished bodies of men, representing the religious, fraternal, commercial and professional interests of our State, but this is the first time that we have had the honor of entertaining an organization, the origin and the purpose of which is to lay plans and devise ways and means to better alleviate human suffering, restore health and direct the energies of the weak to a higher and a nobler plane of living.

We therefore welcome you, because you are representatives of a great and growing organization, created by the necessities of your profession and by the genius of men who have invented, step by step, the methods which are indispensable in modern practice, without which you could not undertake to do what your Society is accomplishing every day.

Of course the most essential part of your great organization is not the organization itself; it is the intelligence, the brains, the sense of truth and honor that reside in the men who conduct it and who are making it a vehicle of usefulness and an unlifting power for good in the State.

We welcome you, gentlemen, because you constitute one of the most useful and important classes of society, and belong to a profession that calls for these qualities that make for the highest manhood; calls for a clear head, a steady hand, a stout heart, and those innate attributes that mark the true gentleman.

You rightfully belong to the great fraternity of working men, bred and born to work, and this honorable mark, written upon your brows by the hand of the Almighty, identifies you with all classes of working men, whether of hand or brain.

Sancho Panza said: "Blessings on the man who first invented sleep"; but I say, "Blessings on the man who first discovered medicine, and blessings on the men who practice it." (Applause.)

Commerce, we all know, is the vanguard of civilization, and wherever commerce goes there must go the blessings of science and of the arts, and among them there is none greater than the science of medicine, for whatever conduces to health makes men wiser and better, improves our civilization and lifts us to a higher and a better life. The best physical and mental efforts are obtained from healthy minds and bodies, and in order to have these we must have skilled men to direct in the care and preservation of them. Thousands of men and women are to-day moping around with sallow faces and lusterless eyes, grunting and groaning with all sorts of imaginary ills, that simply need the touch of a doctor's hand and the torture of a doctor's medicine. It is marvelous, the change that comes over a man who has been cleansed and thoroughly renovated by an up-to-date doctor. It makes him a better father, a better citizen, a higher class and better

working man, with greater appreciation of the blessings and comforts of life.

Mr. President and gentlemen, we welcome you because your profession is an absolute necessity for the comfort and well-being of mankind.

> "We can live without poetry, music and art;
> We can live without conscience; we can live without heart;
> We can live without friends; we can live without books;
> But civilized folks can not live without doctors."

(Applause.)

There is no world so dark and dismal and narrow as the one in which the poor dyspeptic lives, and when a doctor leads one of those wretched men out of that world into the bright and hopeful realm of health he carries him to a sort of heaven on earth; he scatters sunshine; he scatters joy and gladness; he scatters health and happiness; he sweetens the moments, the thoughts, the feelings, the temper and the heart; he renews on earth lost Eden's faded bloom, and flings hope's halcyon halo over the wastes of life.

Sympathy and help, in times of need, radiate from the person of a good doctor, as love glows from the brow of a good woman. He goes down to the dark places; he lives in memories of hand-to-hand battles with death; he wards away despair, and when the fight is lost he goes out with an infinite pathos in his face of one beaten an hundred times, to be beaten yet again—knows nothing and believes nothing—surrenders to the inevitable.

In honor of a common cause and in the presence of a common danger men have offered upon their country's altar the rich libations of their blood, and their names have been embalmed in story and in song. But no hero, on any land or sea, ever displays more courage or loyalty to duty than the brave doctor who responds to the midnight call, faces the storm in the night, cools the fevered brow of pain, beats back death from the humble home, and brings sunshine and hope

to the despairing soul. No surveyor's chain has ever marked the boundaries of his love for humanity, and no plummet ever sounded the depths of his loyalty and devotion. Such service makes its appeal and wins the unspeakable gratitude of man.

Mr. President and gentlemen, we welcome you not only because your mission in life is to alleviate human suffering, but because you are becoming more and more a mighty factor in the development of our business life and energy, and because you are making life sweeter and better by your contact and associations with men. From the great fountain of charity in your souls there flows a thousand streams of blessings to suffering humanity. Your influence and your ministrations in the home make a world of joy and smooth a world of sorrow, and linger around our firesides in all the dearest and sweetest associations of life; upon it hangs the hopes and happiness of the nations of the earth; above it shines the ever-blessed star that lights the pathway back to the paradise that was lost; it stands beside the toiler in the shops, and lends pathos to the ring of the anvil; it goes with the toiler of the field and lends beauty and softness to the great chorus of nature; it goes with the man who drives the plow and pushes the plane and swelters at the forges and in the factories, and helps to roll back earth's tide of withering gall, dry up her dark fountains of grief and turn Iliads of woe into bright songs of gladness.

Mr. President, it is not the philosopher, the scientist, or even the preacher who alone are making the world better, but the doctor who comes into the most intimate relations with the family and, by a single word, sows the seed.

Gentlemen, home is the basis of society and good government, the foundation of the family and of all true, useful church life. Who can estimate the power and the influence of the doctor in the home? It is said that a little pebble dropped upon the shore starts in motion little wavelets that break upon the farther shore. And is it not true that the doc-

tor's influence in the home starts in motion the waves of the moral atmosphere that roll onward and upward until they kiss the shores of a land that is fairest of all?

God bless the doctor who abides in every community to bless his fellow-men, and who illustrates in his life and character the splendid sentiment contained in the following lines:

"There are hermit souls that live withdrawn
In the palace of their self-content;
Their are souls, like stars, that dwell apart
In flowerless firmament;
There are pioneer souls that blaze their paths
Where highways never ran;
But let me live by the side of the road,
And be the friend of man.

Let me live in a house, by the side of the road,
Where the throngs of men pass by:
The men who are good, and the men who are bad—
As good and as bad as I.
I would not sit in the scorner's seat,
Nor hurl the cynic's band;
Just let me sit by the side of the road
And be the friend of man.

I see from my home, by the side of the road,
By the side of the highway of life,
The men who press with the ardor of hope,
And the men who faint in the strife.
I turn not away from their smiles or tears—
Both parts of an infinite plan;
But the doctor lives by the side of the road,
And is the friend of man."

(Applause.)

Mr. President and gentlemen, in conclusion permit me to say that I read a story of a banquet where numberless yarns were spun and countless jokes were told, until at last the banqueters arose and clinked their glasses together and sang in a chorus:

"Landlord, fill the flowing bowl;
Fill it till it is running over;
For to-night we will merry be,
And to-morrow we will be sober."

Then one of the banqueters responded to the toast in this wise: "Here's to my country! Grandest, bravest, freest of the free! Bounded on the north by the Great Lakes; bounded on the south by the Gulf of Mexico; bounded on the east by the Atlantic Ocean; bounded on the west by the Pacific Ocean."

Another gentleman arose and said: "Here's to my country! Bounded on the north by the North Pole; bounded on the south by the South Pole; bounded on the east by the rising sun; bounded on the west by the setting sun."

But, as champagne went down, patriotism went up, which culminated in this sentiment:

"Here's to my country! Bounded on the north by the Aurora Borealis; bounded on the south by primordial chaos; bounded on the east by the precession of the equinoxes; bounded on the west by the day of Judgment." (Laughter and applause.)

Mr. President and gentlemen, if I were permitted to carry out that idea and "bind" the doctor, I would say that he is "bounded on the north by sympathy; bounded on the south by service; bounded on the east by sacrifice; and bounded on the west by unswerving devotion to duty. (Applause.)

Beautiful, beautiful mission in life; fragrant as the violet's perfume; hushed and holy as the Sabbath morning. No artist can paint it; no sculptor can chisel it; no tongue define its future bounds, challenge its right to live, or question its humanitarian spirit.

As the Mayor of Winston, Mr. President and gentlemen, I turn over the keys of the city to you, and offer you special privileges without your having to incur the penalty for the violation of any law. (Applause.)

I will ask all of our splendid resident physicians to physic you, if you get sick; I will ask all of our distinguished attorneys to plead for you, if you get into trouble; I will instruct our efficient chief of police to conduct you to a place

of safety (great applause) if any of you get lost in your perambulations through the mazes of our city.

The only law, gentlemen, you will be required to observe will be the law of hospitality, which will forbid you to hasten away.

In the name of our aspiring city, with its elegant homes and great manufacturing interests, we open wide our gates to receive you and bid you a most hearty welcome. (Applause.)

RESPONSE TO THE ADDRESS OF WELCOME

By Dr. C. L. Pridgen, Kinston, N. C.

Mr. President, Ladies and Gentlemen:

I deem it a great honor indeed that I have been chosen to express to you to-day the thanks of this great body for your most cordial welcome. Among so many of my old friends—old both in years and in wisdom—I feel that I am but a boy, and that it is expected of me to display that enthusiasm which one practices in returning to you our thanks on this occasion.

It gives me a peculiar pleasure, Mr. Chairman, to return our thanks to the people of this good city. Here this morning I have met so many of my old schoolmates, and particularly my old roommate and schoolmate—a resident of this city—whom I have not seen since we sat at the feet of Keen, DaCosta, Hare and Turner and pleaded with you, Mr. President, for our licenses at Durham.

I have often wished to visit Winston-Salem because of what I have been told concerning its history: how in the old days of 1766, when all this part of our State was but a vast wilderness, a little band of travelers came down from a distant State, settled here and began to cultivate and develop it. Laboring against ignorance, want and a lack of utilities, they persevered until they have made this section of the State to blossom as the rose, and they have made their influence felt from border to border of this grand old commonwealth of ours.

Among this little band called "Moravians" came the teacher, the carpenter, the farmer, the minister; and last, but not least, the good old family doctor. He was not the doctor that you see in your cities to-day. He was far different. No carriage and pair stood prancing at his door to speed him over the country. No hideously painted and ill-smelling

motor car awaited his command to speed him over well-prepared roads on a mission of pleasure; but on his tired little nag or in his one-horse shay, and in garments of their own making, we are told in history, that he answered every call far and near and carried succor to the unfortunates in his own careful and humble way.

Our great convention to-day remembers him with pride for his struggles in our profession. And nearly one hundred and fifty years later we are assembled here to-day, in all our strength, where he pursued his lonely labors, to carry out his safe precepts and to devise ways and means for doing the greatest good to those of our race who are afflicted with the greatest affliction that God has put upon mankind—the loss of health and vigor of mind and body.

It should be an inspiration to us in our work this week when we think of this good old man who labored, wept and died, unhonored and unsung, here in this place, hallowed by his memory; who was ever ready to minister to the wants of those who needed his assistance, and who struggled to lay the foundations of that body, whose delegates to this great Convention to-day are met to devise ways and means of carrying our work onward and upward to perfection.

At the time of which I speak this part of the State was nothing but a vast wilderness; but how do we see it now? After the Revolution the little band of Moravians, who had settled and prospered and established themselves in their little village of Salem, sold a part of their lands to other settlers, who formed another town and named it after their hero of the great Revolution, Maj. Joseph Winston.

These two little towns were over a mile apart, but they have now so progressed and grown that they have become one city, with a population of some twenty-five or thirty thousand people. Here we behold a city with modern sewage and drainage, with a modern water supply, and a city with handsome and well-appointed hotels, which are not only com-

fortable, Mr. Chairman, but as inexpensive as the luxurious ones at our State Capital. (Applause.)

Here old Salem Academy is still educating our young ladies. The time-honored institution that has educated and graduated over ten thousand girls, from every State and Territory of our Union, and which is the oldest and most honored institution of learning in our great commonwealth.

Here we see paved streets, electric lights, street railway systems, banks with deposits, I am told, of over five million dollars, manufactures of every description, and everything that bespeaks the up-to-date, modern city.

We are glad to be welcomed here to-day, to enjoy the well-known hospitality of a people who advertise to all the world that we are welcome, and who extend a cordial hand to the stranger.

We hope to enjoy the balmy air from the hills and to drink of the pure waters, so abundant, and of other things not so abundant; we hope to partake of the repast that awaits us, ever keeping in our minds the cool, clean wards of the new fifty thousand-dollar hospital, in case we should find ourselves victims of our own bad judgment.

I thank you, not only individually, for your hearty welcome, but I am commissioned by the great Medical Fraternity of the State of North Carolina to extend to you their sincere thanks for this kindness.

I will not keep you longer from the pleasures that await us, and I ask to leave but this one thought with you: We thank you. (Applause.)

MINUTES

OF THE

FIFTY-FIFTH ANNUAL SESSION

OF THE

Medical Society of the State of North Carolina

HELD AT

Winston-Salem, N. C., June 16-18, 1908.

WINSTON-SALEM, N. C., June 16, 1908.

At the conclusion of the response to the address of welcome, Dr. J. Howell Way, of Waynesville, the President-elect, was introduced by Dr. Spencer and delivered the President's Annual Address, entitled "Random Notes on the History, Aims and Purposes of the Medical Society of the State of North Carolina." The address was listened to with great interest and the President was warmly congratulated by many members on its conclusion. (See Index for address.)

The President called for papers in the Section on Anatomy and Surgery, Dr. Joshua Tayloe, Chairman.

"Diagnostic Value of Exploratory Incisions With Case Cited," Dr. Joshua Tayloe, Washington, N. C.

"Ligation of the Femoral Artery Eight Hours After Injury; Results," Dr. J. R. Paddison, Oak Ridge, N. C

DISCUSSION.

DR. J. M. PARROTT, Kinston, N. C.: *Mr. President:* I am constitutionally opposed to papers being read and not being discussed.

Now that paper possesses unusual genuine merit, and it is unjust to the Society and to the reader of the paper to permit it to pass without some remarks.

The only criticism I have to offer about that paper is that it could not be heard. I believe that if the doctor had read

the paper with more force, so that those of us who were sitting even near the front could have heard more of it, then we would have been very highly edified by the paper.

As it is, I desire to say that I consider it a paper of worth and character. Such injuries as the doctor has narrated are liable to fall into the hands of any general practitioner in North Carolina, and his way of handling the case certainly appears practical to me.

It is of great value to a doctor to be prepared at all times to meet an emergency, under all circumstances, and I desire to congratulate the doctor upon the nice way in which he met the emergency in the case, and on the splendid preparation of that paper.

Dr. A. A. Kent, Lenoir: *Mr. President:* I just wish, sir, to give emphasis to the remarks of Dr. Parrott in regard to members not raising their voices and reading a paper so that it can be heard. As you know, I sat near to where the gentleman stood and I couldn't hear that paper, however good it may have been, and I know the gentlemen further back could not understand and fully appreciate the paper.

I know how much time and trouble it takes a doctor to prepare a paper, and I know when he reads a paper he desires that paper to be heard, and I wish to insist, for my part, that papers be read so that they can be heard. I enjoy them and want to hear them.

DISCUSSION.

Dr. J. P. Turner, Greensboro: In regard to this case of Dr. Paddison's, it is indeed a unique one; and, as Dr. Parrott has just said, it is a case that may occur in the practice of any physician. It may occur in the practice of the man who is ten miles from consultation, and by reason of that it is very interesting, or should be, to the general practitioner.

I wish to congratulate Dr. Paddison and Dr. Bahnson on their good results in this case. And incidentally I would

like, right along this line, to report a case that fell into my hands about two months ago of somewhat similar character.

Dr. Z. T. Brooks, of our town, was called to a young man who had been shot. He said he shot himself. However that may be he was shot. The ball had entered his right thigh, near the hip, and had gone diagonally downward toward the inner side of the limb and come out, and was lodged immediately under the skin on the inner side of the knee. The injury had taken place some two hours previous to the doctor seeing it, and he at once was afraid that the femoral artery had been injured, and after we had both examined it we were still afraid that the femoral artery had been injured; but still, for fear that it had been injured, we did not go into it at that time, but had the patient sent to the hospital where he could have good care and be watched closely, and in order that we might go into it in case of emergency.

There was no hemorrhage of external wound at all, other than what is to be expected of a pistol ball going through the skin. In the course of forty-eight hours there was a great deal of swelling about this leg, and, although the patient was instructed not to get up at all, to use that leg, he got up, and when he got up he had a hemorrhage, and as soon as we could get him in shape we found the femoral artery was cut diagonally across in Hunter's canal. We ligated both ends and our patient got along well. We treated it as an open wound, in this case, because there was so much clot in the tissues.

The pulse remained good throughout the anesthetic and afterwards, and never was weak at any time. The only complaint he made of the limb was a certain amount of swelling that occurred during the next four days and a numbness.

I was very much amused at some of my friends who asked me, after they found out I had ligated the femoral artery at the upper end of Hunter's canal—they said: "Well, when are you going to cut that leg off?" I said: "Never, as long as it is warm."

You have a chance to save it, and I make a plea for the

trial to save these cases. It is worthy of the trial, as Dr. Paddison has demonstrated in his case, and his case is much higher up than the one that I had.

Dr. Paddison *closes: Mr. President:* I wish to thank Dr. Turner and Dr. Parrott for the remarks they have made about cases of this kind.

Dr. Turner brought out one of the points that I consider in this case of great importance: the question, when we were in doubt as to what vessel was severed, whether we should go right into the wound or let it remain as it is, since the patient is doing well.

In the case of my patient, we took no chances and went right into the wound, and it was good that we did, I think.

In the case of Dr. Turner's, the question of opening the thigh was deferred a little while, and the patient upon exercise, or motion of the limb, produced a right considerable hemorrhage; and that is a point I am glad he brought out. It was one that I wondered about in my own mind, and these cases, of course, coming once in a lifetime to a general practitioner, causes him to wonder what is the best course to pursue.

I believe that we did the proper thing with this patient in question.

I thank the gentlemen for their remarks.

"Orthopedic Surgery, a Plea for the Crippled and Deformed Children of North Carolina," by Dr. J. L. Haines, Winston-Salem, N. C.

Dr. W. P. Whittington, of Asheville, N. C.: *Mr. President:* I thank Dr. Haines very heartily for his short but very excellent paper.

I think this line of surgery is one that has been very marvelously neglected, especially in our rural districts. We find every day, almost, as we go from place to place over the country children and grown people—especially grown people,

I might say—who are left cripples for life simply because they did not have the proper advice and care from the family physician, and at the proper time.

As an illustration of this fact I call to memory a case of tallapes equinis, which I saw a little over a year ago, in a little girl nine years old. She was literally walking on top of her foot. I accidentally saw this case, having been called in consultation to see her father, who was suffering from pneumonia.

I asked them why they had let the little girl grow up in that condition. They said the doctor told them it could not be remedied. The doctor was a graduate in medicine and a licentiate in North Carolina.

Now, I do not mean to criticize, but I mean to encourage the physicians here to be more careful; first, in the investigation of the cause and remedies of some cases, and secondly, in carrying out the treatment.

I advised these people that with the proper operation and with the proper brace that foot could be straightened and made a useful member, and this girl could be made to walk uprightly and wear a neat, nice shoe. They accepted my advice, and this girl is now wearing a shoe almost as neat as the other, and is walking on the bottom of her foot instead of on the top.

There are some difficulties in carrying out the treatment of these cases: we often fail to get the cooperation of the parents, even after we have instituted the treatment.

I remember another case of a little child born with the tallapes equinis. They asked me what they could do. I told them it could be cured; the remedy was easy, but it would require patience and perseverance. I divided the tendo-achilis, used the Lorenz method in producing over-correction of the deformity in the body of the foot; did not cut the planter-fascia, as I should have done, and as it is generally advisable to do, but put the foot in plaster of paris and in good condition; kept it in plaster of paris from three to six

weeks, applied a brace, and impressed upon the parents the importance of keeping the brace on until the child had gotten well. The child complained of the brace, the parents took it off and threw it away, and the child relapsed into the former condition, but not so extensive.

I did not see the father for quite a while, but I met him on the street one day. He had the child in the carriage—the child was about two years old—and I asked him how he was doing. He said "No good," and he showed me the child, with a soft shoe on, his foot almost ready to turn over again. I said, "My dear sir, you are neglecting that foot. You are not following my advice. Come up and let me see the child and we will adjust the brace, and you must keep it on."

I know the foot could have been kept in place if they had just kept the brace on. The parents did not appreciate the manner in which I gave this advice, and the next thing I heard they had carried the child to a city in a distant State and had had the child operated on again. So you see I did not do my duty in that case, exactly, and the parent did not do his; the doctor lost reputation, the parent was put to more expense than necessary, and the child to probably more mutilation and suffering.

To this is one important thing: we must impress on the minds of the parents of these little fellows the importance of carrying out the treatment.

All of these tillapes cases can be corrected without extensive and serious operation if the foot is kept in a brace for a reasonable length of time.

Dr. Haines *closes:* *Mr. President and Gentlemen:* Just one word in conclusion. Those cases, if the family physician does not get hold of them and seem to take an interest in them, fall into the hands of quacks. They take these children to the brace-fitters, and they more often make the child fit the brace than the brace fit the child.

They come back home and the child is still deformed. The

family physician should take an interest in those children and be patient in the treatment of them. It requires a long experience of time in some cases to correct these deformities.

I had the pleasure of seeing Dr. Lourenz operate for his famous bloodless operation for hip-joint disease, and the results are marvelous; but those children are left in plaster of paris casts for months and months, and they are closely watched and treated in the special hospital.

I think if the societies would take more interest in it and have in every hospital—every town now has a hospital—a ward specially fitted and adapted for treating these cases, we could keep more of them in the State and straighten out more children who would otherwise be badly deformed.

"Some Practical Thoughts on Hernia," read by Dr. R. L. Payne, of Norfolk, Va.

DISCUSSION.

Dr. Stuart McGuire: In availing myself of the privileges of the floor, I desire to thank the Society for the invitation to be present at this meeting. I see so many of my friends that I do not feel at all a stranger and am glad to be here.

I think the Society is to be congratulated on the admirable paper of Dr. Payne. He has presented the important subject of hernia in a clear and practical manner. I thoroughly agree with him in the advice he gives in dealing with strangulated hernia, namely, that taxis ought to be used with caution and only during the early stage. That it is the duty of every practitioner to operate on these cases if a more experienced surgeon is not quickly available. The work can be done with a pocket case of instruments, and general anesthesia is not necessary as the parts can be rendered insensible by the injection of a weak solution of cocaine.

I also endorse Dr. Payne's advice with reference to the treatment of the loop of bowel which is black and may be

gangrenous. When in doubt, it should be drawn out of the abdominal ring, wrapped in gauze and kept wet with hot saline solution. In a few hours either circulation will return and it can safely be put back in the abdominal cavity, or else the evidence of gangrene will be unmistakable and the part can be resected or the patient transported to a hospital, if the facilities at hand are not adequate to meet the conditions.

I am glad Dr. Payne has shown me his kitchen strainer. I have employed, for a similar purpose, artificial wire bust-forms, which can be purchased in a dry goods store at a nominal cost. It is sometimes embarrassing, however, to ask a lady clerk for them, and in future I will get a kitchen strainer from the five and ten cent store.

As Dr. Payne has said in his paper, hernias ought to be corrected before they get strangulated. An ounce of prevention is worth a pound of cure.

Hernia is one of the most frequent disabilities that afflict mankind, and operations have been done for the relief of the condition as far back as there is any record of surgical work. One thousand years ago surgeons finding that it was impossible to constrict the abdominal ring, undertook to cure the trouble by obliterating the abdominal ring. This necessitated castration and so popular did the operation become that finally laws had to be passed in order to regulate it.

The modern operation for hernia began with the study of the anatomy of the parts by Cooper. It was made safe by the establishment of aseptic and antiseptic surgery by Lister. It was advanced by the introduction of the absorbable suture by Marcy, and its technique was perfected by the Italian surgeon Bassini. The latest advance was in demonstrating that the work could be done safely and painlessly under cocaine anesthesia by Bodine, of New York. We can now tell a man who comes to us with hernia that it can be cured without appreciable danger; without much question of permanency; without more than two or three weeks detention

from business; without a general anesthetic and without pain. If I were beginning surgery and looking for a profitable field of useful work I would select hernia as the specialty. From one-eighth to one-sixteenth of the world's population have the trouble, and here in this town of Winston-Salem I know there must be one thousand cases which need operation. There is no field I know of so profitable and none for which so much good can be done for humanity as in the cure of hernia. It is the surgeon's duty to educate the practitioner and the practitioner's duty to educate the laity. A patient should not be permitted to go through life burdened with a truss and in constant danger of strangulation, but should select a convenient time to have his hernia operated on and cured.

Dr. Weaver, of Asheville: *Mr. President:* I am sorry that the majority of this Society prefers to enjoy the "mess of pottage" more than this excellent feast, prepared by this excellent paper of Dr. Payne's.

I wish to speak, more from the point of the general practitioner, in reference to the method of treatment of hernia in children.

I have had on several occasions splendid results in the treatment by the hank of yarn (in children), and I can say from experience that it is practical and simple in its method of application and results, and I would call the attention of the general practitioner to this simple and practical method of treatment of hernia in children.

Dr. M. Bolton, Rich Square, N. C.: *Mr. President:* The gentlemen who have spoken on the subject have stated that the general practitioner ought to be prepared to do this operation, and I just want to say that the country practitioner can do this operation successfully if he will just have the confidence in himself.

Possibly it has been my lot to see more than my share of hernia. I have seen one woman die for want of an opera-

tion in strangulated hernia. I have seen a man die for positively refusing to be operated upon for strangulated hernia.

I remember seeing another case, where operation was advised, refused, and later a surgeon was sent for from the city and came out and operated after it was too late to save the patient.

I had a surgeon come into my community and perform the operation successfully for strangulated hernia on a man past sixty-five years of age.

I practice in the country and no hospital is accessible. Of course I can send my patients to Norfolk or Tarboro, but very often it would take twenty-four hours time for that patient to reach the hospital, so I determined if I ran up with another case of strangulated hernia, if the patient would consent, I would take my chances on it. Since that time, with the assistance of one or two of the neighboring physicians, I have done this operation for hernia twice, successfully. The patients have recovered without the least bad symptom.

I have a patient convalescing now from an operation for incarcerated hernia, with firm adhesions.

The first operation I performed was not difficult, but the last one I did—two or three weeks ago—I found extremely difficult. Then I had no experienced anesthetizer, and when I was about half-way through the operation he told me the patient's pulse was getting bad (and I know mine was bad, for I was already in trouble). and he told me to hurry up, because the patient's pulse was sinking, and I hurried up.

I was not satisfied about the operation. for I feared I had pushed the intestine back before the adhesions were thoroughly broken up. The patient was a negro; he never had a bad symptom, his temperature never went above one hundred, and evidently in my fright I had relieved the constriction thoroughly.

I could not afford to send that man to the hospital after undertaking the operation and let a surgeon get hold of him,

and I was loath to go back into the abdominal cavity, though I should have done so, if necessary; but fortunately, as I said, the case turned out all right.

If the physicians in the country districts are friendly and are not nervous, and we will study well our limitations and not go into any of these cases in a reckless manner, we can do a great many of these things successfully. Several operations for stone in bladder, abdominal abscess, appendicitis, etc., have been performed in my section successfully.

The thing for us to observe in the country is absolute cleanliness. We hear much talk of antisepsis and asepsis and things of that kind in the cities, but the country practitioner often feels that he has not the microbes to contend with, and we do not always thoroughly sterilize things as we should. If we will exercise good horse sense, and have absolute cleanliness, we will have good results.

Now, a word in regard to the treatment of hernia in very small children: Dr. Payne refers to a method that is successful in his hands. I had a case a few years ago. It was the child of a merchant. I ordered two or three different trusses, but none of them fitted; they all irritated the child. The man's wife was an intelligent woman, and we made a truss. We got some elastic and she tacked on the end of that elastic a good, soft pad, one big enough to cover the opening, carried it around the child's body and pinned it over the pad, then carried the end of the band through the perineum and pinned it posteriorly. She made, possibly, one-half dozen of those trusses. I always told her to have the child's hips elevated when she applied the truss, and to be very careful not to allow any protrusion.

That child got well, and since that time I have used a homemade truss with much more satisfactory results than with a bought one.

With an intelligent woman to keep the child clean and use absorbent cotton and things of that kind, where the band

has a tendency to irritate the patient, those cases can be cured.

I have never seen the method Dr. Payne recommends tried.

Dr. Payne *closes: Mr. President:* It is too near dinner time to inflict myself further upon this Society, and I therefore ask that I be excused.

The President announced a recess until 3 p. m.

Tuesday Afternoon.

Session resumed at 3 p. m. President Way in the chair.

"Mesenteric Thrombus Following Splenoctomy," Dr. J. W. Long, Greensboro, N. C. (See index.)

discussion.

Dr. W. S. Rankin, Wake Forest, N. C.: The report of a rare disease is of great importance, because it tends to widen our clinical horizon and calls attention to diseases that would otherwise go unrecognized. In this respect the report of Dr. Long, in regard to this interesting case, is one of the rarest that has fallen to my limited observation.

What I shall say will be only a general and preliminary report of a condition which deserves and will receive careful and thorough treatment later, when time permits.

I wish to-day to call attention to the combination of rare pathological pictures here present.

First, we have an undoubted case of primary splenomegaby; second, a mesenteric thrombus; third, embolic processes, going on before and after the removal of the spleen, and very probably a paradoxical embolus, although I am not willing at this time to be put on record as claiming this last condition to be present.

I received the tissues after they had been in 4 per cent formalin two or three days, and the following brief description is based on the "fixed" tissues:

SPLEEN.

Size—15x9 cm.

Weight—650 grms. Normal weight, 170 grms.

Shape—Increase in size takes place in all directions. It forms an elongated oral, with deep notch on either side.

Capsule—Smooth over most of surface, but here and there shows numerous connective tissue bands resulting from recent adhesions.

At one place spoors raised, white infarct. Infarct comes to an apex which looks toward the hilum and measures approximately 5x3x1 1-2 cm.

Color—Dark.

Consistency—Is in formalin, but even then seems unusually firm to touch and knife.

Cut surface—Smooth, dark, and in one pole shows numerous punctuate hemorrhages. These are about the infarct.

There is also scattered uniformly over the surface dark blue spots, round, and measuring 1-7 mm. in diameter.

Microscopic examination shows the condition described by Boraird and others, to wit: Hyaline degeneration of many corpuscles, general increase in the reticulum about the sinuses, with a swelling of their endothelial lining until some sinuses are almost filled by it. The hyaline corpuscles correspond with the round, bluish spots described in the gross specimen.

The symptoms of this disease, as set forth by Dr. Osler, are: (1) Chronic course, ranging from two to ten years; (2) enlarged spleen; (3) hematemesis, and (4) a secondary anemia with a chlorotic tendency.

INTESTINE.

Three pieces of small intestine, measuring altogether about 120 cm. Of this about 35 cm. is black, hemorrhagic and gangrenous, fading by gradations into the lighter colored part. The whole intestine is contracted and empty.

MESENTERY.

Thickened, contains numerous hard nodules which prove on section to be thrombi. All mesenteric veins greatly distended and thrombosed, mesenteric arteries contracted and empty.

Even in mucosa and sub-mucosa of intestine the dilated veins can plainly be seen. Mesenteric glands swollen and deep pink color. All through mesenteric fat we can see translucent areas and streaks.

Microscopic examination shows the dark area of intestine to be necrotic and infiltrated with degenerated blood. This is a hemorrhagic infarction of intestine.

The mesenteric veins under the microscope show an organizing thrombus, which, from its advancement, seems to be about ten or twelve days old. Some of the veins entering spleen show a pronounced phlebo-sclerosis. The arteries are very much contracted and empty, suggesting an occlusion in them, for if there was no influence to close and empty the arteries the blocking of the veins into which they empty their contents should have distended them.

The mesenteric glands are swollen and hyperæmic, sinuses are dilated and there seems to be some proliferation of the endothelium lining the sinuses.

The translucent areas and streaks noted on gross examination prove under the microscope to be embryonic connective tissue.

It is interesting to attempt to connect the pathological with the clinical picture.

Of course the patient came to Dr. Long with primary splenomegaby. The spleen was removed and presents the first puzzle in the anemic infaret of recent date. No clinical evidence of heart lesion. Whence the infarct producing embolus?

Six days after operation the pain in the seat of the wound has reached such intensity as to necessitate reopening. Here

a lot of clear red-tinged serum has collected. No evidence of inflammation. This was most certainly the result of ligating the numerous large veins that are always associated with a splenomegaby. The pressure from the accumulated serum causing the pain, and its removal through the incision and gauze-drain gave the relief that lasted five or eight days.

After this relief we have a second onset of pain, but situated more in the umbilical and supra-pubic region, gradual in onset, but increasing steadily, colicy in nature, later associated with more or less intestinal paralysis. In ten or twelve days this pain reaches a degree no longer bearable, and other symptoms, too, signal the operator. An operation shows the condition above described. The symptoms correspond to the formation of the mesenteric thrombus.

But why should the arteries be empty and contracted? Could there have been a paradoxical embolus with its origin in the thrombus and its termination in the mesenteric artery?

These and others are interesting questions which this case propounds.

In a fuller report, when we have had more time for a review of the literature, we hope to consider these unsolved problems of this case.

"The Surgical Conscience," Dr. John C. Rodman, Washington, N. C.

DISCUSSION.

Dr. Francis Duffy, New Bern: *Mr. President:* I am not willing to let this paper go by without comment. I think it very important that this idea of the "surgical conscience," as he calls it, should be always with us. Hospital appointments, trained nurses, and all that, make it so easy to operate that you are resisting a temptation, sometimes, and that idea of "the surgical conscience" has to be kept well to the front.

If I may be pardoned for personal reference, the doctor

spoke of his connection with the Marine Hospital service. I happen to have that same appointment in New Bern, and I remember some time ago how I stood in relation to a patient of that service.

The man had a compound dislocation of his foot, which was turned to one side, the smaller bones of the leg broken, the anterior tibia muscle was torn out and hanging at its lower attachment; there seemed to be nothing to do but to amputate that limb. The assistants I had with me advised amputation. It was a very easy thing to amputate that leg, but I thought possibly I could save it. By constructing a perforated tin apparatus, which would allow me to keep up a pretty constant irrigation and hold the bones in position, I did save it.

To make the story short, I cut off some of that muscle, stitched it back, reduced the dislocation, put drainage tubes through it, and the man stayed as long as the service will allow a man to stay with us, and then I transferred him to another hospital.

He came into my office a few days ago. He had an ankylosis, of course, and a surgeon in Baltimore had taken out a piece of bone there. He had a limb very much better than an artificial limb, and I must say—while again I apologize for personal reference—that if I had not consulted my surgical conscience, I should have amputated that limb.

It was so easy to cut that limb off, and would have been a great deal less trouble than the course pursued. The somewhat mutilated limb he is now walking with is far superior to any artificial limb that can be secured.

Dr. John Hey Williams, Asheville, N. C.: I should like to make a few remarks in regard to Dr. Burrus's paper of this morning, concerning exploratory incisions.

We know that frequently, with all the aid which our knowledge and science has given us, that we are frequently unable

to make the diagnosis of what is going on in the abdominal cavity. We know that any man who says that he can make a positive diagnosis of abdominal or pelvic trouble, without an exploratory incision, is a fool. (I am quoting Lawson Tait.) Any man who has had his hands inside the abdomen knows full well that he never knows what he is going to find until he gets in there.

We know that exploratory incisions are so very important that I do not believe a man would treat his surgical conscience right if he does not go inside the abdomen with an exploratory incision. It is done in every town and village in the country, every day. We know that the knowledge of even the younger men, fresh from the schools, is such that they are able to go into the abdomen with absolute impunity. Ninety-nine times out of a hundred they can establish the diagnosis and they can have plenty of time then to refer the case to a man that they consider competent, and put the patient in proper hands, which action will probably save a life.

I do not think the surgical conscience ought to go quite so far as to debar a competent man from making those exploratory incisions—that we would not like to have classed as operations. I do not consider them operations, myself, and would not like to have them classed as such. That is the only point in which I can have any variance with the doctor.

I know full well the value of the surgical conscience, after years of knowledge—surgical knowledge, and surgical surgery. I have seen limbs saved that are thoroughly useful limbs to-day, that, at the first blush, the temptation was to amputate.

As Dr. Duffy says, it is so easy, and saves so much trouble. It is a brilliant thing to do. It is done in a few minutes, and the patient is off your mind. That is very easy. But when you have a poor devil that has no money to pay you from day to day, for several weeks, it is quite a trial to the surgical conscience. You know, if you take the responsibility

of saving that limb, it is up to you to do it, no matter what it costs you, in time or trouble. It is surgical conscience. (Applause.)

"Etiology, Symptoms, Diagnosis and Treatment of Empyemia, with Report of Thoractomy," by Dr. John T. Burrus, High Point, N. C. (See index.)

DISCUSSION.

Dr. John C. Rodman, Washington, N. C.: *Mr. President:* I did not hear all of the doctor's paper, but right along that line I want to report a case that I had two or three months ago. It was a case sent up to me from the lower part of the county, a case of long standing in that side of the pleural cavity.

The accumulation of fluid was so extensive that it pushed the heart from the left side, clear to the right side, and you could feel the apex beat on the right side.

I made an incision into the pleural cavity, simply, and must have gotten between one and two gallons of pus.

The patient remained in the hospital several weeks, but made a complete recovery.

It was a very interesting case to me—that it should push the heart clear over to the right side, and that there should have been such a great amount of pus.

Dr. James A. Burroughs, Asheville, N. C.: I have enjoyed the doctor's paper very much and do not think that this Society should pass a paper of its merit without a discussion.

There are several points that are frequently overlooked by a large number of physicians.

The first point I wish to make is that empyema should not ordinarily develop. The serum should be removed as soon as formed. And if there is a reaccumulation, remove it again in a length of time varying from four to seven days, as may be required. After seven days, if there is no re-

accumulation, it is safe to say that the pleura is assuming a normal condition.

The last thing I did before leaving my office was to tap the right pleura of a tuberculous patient and remove three pints of serum. And I doubt if this case will need a second attention in this manner.

This class of cases is seen in my office—I may say—several times a week.

I simply scrub the point in a vertical line from the axilla between the seventh and eighth ribs with alcohol—freeze the same—introduce the troca and canulla—withdraw the troca—and the fluid flows out from position and pressure, as the stream becomes interrupted by respiration.

There is no excuse for empyema, except ignorance, besides an occasional rupture of a cavity into the pleura pulmonalis, in which case the pus gravitates into the pleura, instead of being coughed out by the usual route.

When the pus cases come under my care—and they do frequently—I either introduce a rubber tube at the lowest point practicable, or, at times, take out a button of rib and simply keep the cavity washed out with a salt solution. As the pus subsides, the drainage tube is removed and sterilized gauze, of considerable length and quantity, is placed into the bottom of the pleura, with the end of gauze outside kept in position by a large safety pin, well strapped with adhesive plaster, and the wound properly dressed.

In no circumstances is peroxide used in the pleural cavity in my practice. And in my opinion peroxide of hydrogen never should be used in the pleural cavity.

One more point is this, which should always be recognized: in a case of dry pleurisy, to say nothing of an effusion of serum or formation of pus, that every case is tubercular unless produced by trauma, cancer or syphilis. The three latter causes are apt to produce empyema.

Dr. J. F. McKay, Buie's Creek, N. C.: *Mr. President:* There is one point in regard to the irrigation of the pleura,

after thoractomy, which I wish to emphasize. My experience has not been very extensive, but so far as it goes, it is opposed to irrigation in these cases.

I distinctly recall a case where irrigation with hydrogen peroxide, permanganate potash solution, or even sterile water, was followed by rigors or chill and rise of temperature. I think irrigation not only useless, but harmful.

Although our surgical friends may not agree with us, I believe that the experience of most physicians will bear me out in saying that resection of the ribs is rarely called for except in old or neglected cases.

Dr. L. A. Crowell, Lincolnton: I certainly concur with the doctor who has just spoken, in regard to irrigation. I irrigated one case that came very near dying from collapse while I was irrigating.

I think, if in these cases we would make the opening sufficiently large to admit index finger, and in that way remove the clotted pus, there would be no necessity for irrigation.

I have pursued this course in the last cases I have had with success.

Dr. J. T. Burrus *closes:* I thank you, gentlemen, very much for discussing this paper.

I would like to say that if the pus discharges freely, and is not too thick, then I do not believe an irrigation is well; but if the pus is thick and does not discharge freely, my experience has been that the irrigation causes the pus to flow more freely—and certainly there could possibly be no injury sustained by introducing an antiseptic solution, under certain conditions, into the pleura cavity.

I was unable to hear Dr. Burroughs's remarks, but I take it for granted that they were all right.

"Hydrocele," Dr. C. E. Moore, Elm City, N. C.

DISCUSSION.

Dr. Stuart McGuire: *Mr. President:* I will not detain you more than three minutes. I shall call the attention

of the Association to a new operation for hydrocele called the "bottle method." Until recently, when a surgeon had to tackle hydrocele, he either tapped it or injected it, or opened and packed it, or excised the sac. These different methods have been most admirably described by Dr. Moore. I have used them all, but I have never felt satisfied with one of them.

Some months ago there was published in the *Annals of Surgery* a description of the new operation, which, to my mind, is so superior to the old ones that it is destined to succeed them all. I have done this new operation four times in the last two months and in no case did it take longer than five minutes and all the patients were able to leave the hospital within a week.

The scrotum is grasped by the hand, so as to make the skin tight, and an incision is made through the scrotum, the distended tunica vaginalis shelled out so that it hangs through the incision as a flask or bottle. A vertical incision is made at the neck and the fluid allowed to escape. As soon as the sac is empied the testicle is brought up to the opening and pulled through it, thus turning the sac inside out. The mass is then returned to the scrotum and the skin incision sutured. No vessel of sufficient size to necessitate ligation is divided and no suture except in the skin is employed.

Dr. John W. Long, Greensboro, N. C.: *Mr. Chairman:* I rise to say that the operation described by Dr. McGuire, as I understand him, is an excellent one, and in view of the fact that following the operation for varicocele, hydrocele will develop in about one case in every ten, it is good practice to invert the sac, turn the testicle out when operating for varicocele, just as is done in the operation for hydrocele. I have followed this method in a number of cases with good results.

Dr. E. C. Moore *closes: Mr. President:* I have nothing further to say, except to thank the gentleman for the discussion of my paper, and particularly do I wish to thank Dr. McGuire for describing the operation with which I was not familiar.

"The Influence of the Constitutional Condition of the Patient on the Result of the Operation," Dr. Stuart McGuire. Richmond, Va.

DISCUSSION.

Dr. Whittington: *Mr. President:* I enjoyed Dr. McGuire's paper very much indeed, and I arise—not to add anything to the paper—but to simply bear testimony, and I want to say that what success I have had in surgery has been due to the thorough examination, both as to diagnosis and to determine the condition of the patient, in reference to the advisability of operating, and further, to the careful preparation of the patient, so as to put all the physiological conditions in such a state as to most advantageously favor the operation.

I have enjoyed the paper very much, and I thank the doctor for the same.

Dr. McGuire: I have nothing more to add. I desire to thank the Society.

"Carbuncle—Its Etiology, Pathology and Treatment, Particularly the Latter," read by Dr. Thos. E. Anderson, of Statesville, N. C.

DISCUSSION.

Dr. Stuart McGuire: I congratulate Dr. Anderson on the result of his case. I congratulate myself, too, as the method he followed is the one I teach my students.

I think, without doubt, the best way to deal with carbuncle is to bodily excise it before it has time to infect neighboring tissue. If done early, completely and cleanly it will save the patient time and the danger of septic complications.

Dr. G. L. Sikes, Salemburg, N. C.: *Mr. President:* I would like to state that six months ago I performed the same operation, though at a later stage, on an old lady seventy

years old, and it was quite a success, and quite a relief to the old lady.

Dr. M. L. Fox, Guilford College, N. C.: *Mr. Chairman:* Some of us don't like to operate. I remember being at the Charlotte Medical Society some years ago, and some man read a paper on "Excision of Carbuncle," or "Surgical Treatment of Carbuncle." That was news to me, but of course it is not to some others.

I went home with my mind made up that I would try to operate on the next carbuncle that I struck. So, in a few days it happened that a fellow came up to my place stating that he had not had any sleep for three or four days and that he had a large carbuncle on his neck.

He was a worthless kind of a fellow, and I thought this a very good time to try this operation. I told him to go home and dig down into the earth and get some yellow clay and make a paste and put it on the back of his neck, as thick as a silver dollar, and when it got dry, to replace it with the same application. I instructed him to take some salts and gave him a tonic of iron and quinine, under the constitutional condition the doctor speaks of. I told him to report to me in two days, which he did, with the carbuncle all gone, and with just a little point, discharged, free of matter. The hardness had melted away and he told me after the first night he had slept all right and it gave him no more trouble. Since that time I have used that same application in quite a number of cases.

As I say, I am a countryman, and not used to surgery, and do not practice it very much, and in an impecunious patient especially, I think the treatment I have outlined very good.

Dr. Wood: I take great pleasure in announcing to the Society that we have with us Dr. C. L. Lavinder, of the United States Hospital Service, who is stationed in Wilmington, and I move that he be given the privileges of the floor.

The Society extends an invitation to all visitors to participate in the discussions.

Discussion of Dr. Anderson's paper resumed:

Dr. Weaver: Perhaps there is no field in medicine more interesting than that of bacteriology.

Our friend, Dr. Anderson, has very succinctly described the pathology and the etiology of carbuncle. I wish to ask—more for information—whether any in the audience have tried the new theory of bacterial vaccination, with the streptococcus serum as vaccine in septicoemias, and staphylococcus serum in carbuncle?

If that theory is true, if the great discovery which has been made in opsonic medication by Wright, Douglas, and all the bacteriologists, it has certainly opened a new field for the treatment of infectious diseases, and, so far as I am concerned, the next case of carbuncle, or anything of the kind, I expect to try a preparation of vaccine for the cure of it.

If you will pardon a personal reference, I myself had an onychia on one of my phalanges, and I read of Bier's method of hyperæmia. I thought this a good time to try that theory. I straightway obtained an elastic bandage, encircled the finger, and in about half an hour I had tremendous pain. I still continued my treatment, and in two hours more the disease was conquered, and in twelve hours there was not a sign of the disease of the finger.

Now, what happened there, I don't know, but, according to Bier's theory, there was an auto-inoculation set up in the system by which the bacteria were destroyed, and stasis hyperæmia was accomplished and the disease cured.

It is certainly a great field for study and investigation by the members of our profession, and I would hail the day when our rising young men, who are taught so thoroughly in the colleges, in reference to all these diseases, will take up the study and see if they can not make a practical application of this theory for the cure of these infectious diseases.

I will ask Dr. McGuire if he has had any experience with the treatment with bacterius in infectious diseases?

Dr. McGuire: Dr. Weaver has opened up a big subject and has displayed so much knowledge of it that I feel I could more profitably ask him questions than reply to the one he has asked me.

The opsonic theory to which he alludes is very abstruse and difficult to understand. I have given it careful study, and one of my assistants has done some work in practical application.

As you all know, Metschnikoff has taught that the leucocytes eat up bacteria. It has been found, however, that certain conditions affect their appetite. Our effort, under the opsonic theory, is to get something into the system which will make the leucocyte active and will make the bacteria attractive; in other words, just as you put butter on bread to make a child eat it, so you put a little sauce on the bacteria to make the leucocyte grab it. This is practically effected by inoculating the patient with vaccines. I do not think you can buy them from the drug store, but believe they have to be made for each case in a laboratory. The bacteriologist secures from the patient some of the germs with which he is infected, grows them in a culture-tube and from them makes the vaccine. It is found on taking the patient's opsonic index that after inoculation the blood has a positive phase and a negative phase. If the dose is given at the wrong phase, it will do harm rather than good. The opsonic theory promises to do as much for medicine as the germ theory has done for surgery. At present, however, it is merely in the experiment stage. It can only be handled by the skillful bacteriologist, and the general practitioner will have to wait until methods have been simplified and much that is not yet understood made plain.

Dr. Anderson *closes: Mr. President:* I once heard of a man, a father, who gave an entertainment at his home, and

in the course of his entertainment he announced to the assembled guests that his daughter would now recite a piece; and when he looked around and saw the consternation on the faces of his guests, he said: "Remember, I give a fine gold opera glass to every one who stays to hear her."

I am very much obliged to the members of this Society who stayed to hear this paper without any reward.

"Endo-aneurismorrhaphy" (Matas), Dr. Thos. M. Green, Wilmington, N. C.

Dr. C. L. Lavinder, U. S. P. H. and M. H. S.: As an officer in the United States Hospital Service, and in accordance with your motion just now made, you gave me the privileges of the floor and accorded me the right to discuss your papers.

In regard to Dr. Green's paper: I was also personally acquainted with this case, as it came under my care for a while, and, while I am not a surgeon, I am a general practitioner—as most of us are.

It seems to me to be an operation that is certainly the operation, in a great many cases, of aneurism, and it seems strange to me that the operation has found favor so very slowly.

Dr. Green has covered the operation very carefully. I was present at the operation and was struck with its simplicity and the beautiful results which it gave.

Dr. Green *closes: Mr. President and Gentlemen:* The only thing I have to say in closing is just to repeat what Dr. Lavinder says.

At the first blush it does seem odd to go boldly into an aneurismal sac—which we have always treated with so much respect—but in almost all instances we can control the circulation to the sac, which makes it the simplest operation imaginable.

It consists merely of opening the sac and closing one or more orifices, two or three stitches to each orifice, and then

closing the sac. To do the operation as I did on this man, would require perhaps fifteen minutes, and we were not making fast progress, either. It is just this simplicity which commends it to me.

At the same time, it does not interfere with the collateral circulation, which is absolutely necessary for success.

TUESDAY EVENING, June 16th.

THE MEMORIAL MEETING.

THE PRESIDENT, DR. WAY in the chair: The Society will please be in order, and the Memorial Meeting will begin. Dr. C. A. Julian, the Chairman of the Obituary Committee, will submit the Annual Report.

DR. JULIAN: *Mr. President and Gentlemen:* This is the report of the Obituary Committee of the North Carolina Medical Society: (See report.)

Papers read as follows:

"Memorial Services," report by Dr. Julian.

"In Memoriam, Patrick Livingstone Murphy," Dr. R. H. Lewis, Raleigh.

"In Memoriam, Patrick Livingstone Murphy," Dr. G. G. Thomas, Wilmington.

"Life and Works of Dr. P. L. Murphy," Dr. G. M. Cooper, Clinton, N. C.

"Memorial, Dr. P. L. Murphy," Dr. A. W. Knox.

"A Tribute to Dr. Joseph Graham," Dr. H. T. Bahnson. Winston-Salem, N. C.

(See index for above papers.)

THE PRESIDENT: If there are others present who desire to say anything in regard to the character or the life of any of our deceased members, we will be pleased to hear them.

DR. J. H. MARSH: *Mr. President and Gentlemen:* I wish that I felt competent to pay some small tribute to the

memory of Dr. T. D. Haigh, of Fayetteville, whose long service in the profession, and whose honors the Society always bestowed upon him, before I became a member of the profession, and who, in his later life and declining years, in his old age, was such an example of the pure Christian gentleman that we of the Cape Fear section delighted to call him the "Father" of our profession.

Dr. Haigh was of sterling material. He was one of the most honest, upright Christian gentlemen it has ever been my pleasure to know, and I always delighted to be in his presence. It was not only so with myself, but in a number of counties within our section he was the pet of the community, and in his old age, during his declining health, when he became too feeble for active practice, it was a pleasure to meet with him, to call upon him and associate with him in his latter days.

I wish, as I said before, that I were competent to pay some just tribute to his memory here to-night. (Applause.)

Dr. Sykes: *Mr. President:* Will the chair entertain a motion here to-night in regard to Dr. Murphy's life, and the Transactions, that I wish to put?

The President: Yes, sir, with pleasure.

Dr. Syke: As Dr. Murphy was a member of the Sampson Society, and I am a member of that Society, and represent it at this meeting, I would like the chair to entertain this proposition: That a photograph of Dr. Murphy be allowed to go into the Transactions, along with the minutes of this meeting.

The President: Without objection, that will take the usual order of such business matters, and be referred, without debate, to the House of Delegates.

Dr. K. G. Averitt: *Mr. President:* As a member of the Cumberland Society—Dr. Haigh's old home—I desire to say a few words in honor of Dr. Haigh's memory. To

me he was one of the greatest physicians that I have ever had the pleasure of knowing. He was a man that was well posted in his profession, a man that kept up a keen interest in everything that pertained to the profession, up to the very day that he had to give up the cares of the world. He was a man that the general practitioner could always go to and get something from, when he needed consultation. He was a man that was sensible. He always looked with condemnation upon everything that even smacked of being wrong. He was a man that, to me, seemed to live with the supreme idea ever uppermost in his mind, that the chief end and aim of man should be to develop into the full likeness of his Maker, and I do believe that he derived his ideas of life from the world where he now is—the world where there is no more sorrow, pain, sickness, or anything to disturb his peaceful rest.

Dr. Rose: *Mr. President:* I am not a speaker, but I can not let this occasion pass without a word in memory of my dear medical father, Dr. Haigh. Living next door to him as I did, he was indeed my medical father, and I have no words to express my feelings, because my heart is overflowing with them.

He began the practice of medicine in Fayetteville in the spring of '51, and practiced fifty-six years, giving up actual active practice about two years ago. He was a man that gave his life, his mind and his soul to the practice of medicine. He had no other "iron in the fire," like many of us have. He was a man of strict likes and prejudices, but he had the highest regard for a man whose opinions showed thought and who was honest in those opinions, but he had the highest contempt for any one whose opinions or ideas smacked of dishonesty or insincerity. He was a man that had served for years as our County Society's President. He never failed to be in attendance at every meeting of our Society, and it was one of the greatest pleasures of my life to

be with him at all times, and he took a great interest in me as his "medical son," as he called me; and I, more than any one else in my own home, where he practiced, of course miss him more than any one else.

THE PRESIDENT: Is there any one who desires to submit any further remarks?

DR. BEN K. HAYS: *Mr. President:* I do not know in what form to put the desire that I wish to express, but I should like to take some action by which these most excellent papers we have heard read this evening may be called to the attention and published in the press—of course they will appear in the Transactions; but I think the leading daily papers of the State will be most pleased to obtain the four papers that have been read this evening, and if it is in order I would like to introduce a resolution that these papers be published in some of our Sunday papers. I make a motion to that effect. Motion unanimously carried.

THE PRESIDENT: DR. WAY: The Secretary will please make a note of this motion just passed and see that the Sunday papers are provided with these beautiful memorial tributes.

If there is nothing further, gentlemen, before we take a recess I desire to make the following announcements:

The State Board of Health will meet immediately after the close of this session in room 204 at the Zinzendorf Hotel.

The House of Delegates will meet in its hall in the Municipal building in the city hall to-morrow morning at 8:30 sharp.

The general meeting will come to order in this hall to-morrow morning at 9 o'clock.

The special order of the election of the Board of Examiners will be in this hall to-morrow morning at 10 o'clock.

The conjoint meeting of the State Board of Health and

the State Medical Society will be held to-morrow in this hall at 12—noon.

There being nothing further to come before this meeting this evening, I declare a recess until 9 o'clock to-morrow morning.

WEDNESDAY MORNING, June 17, 1908.

The Society was called to order at 9 a. m. by the Vice-President, Dr. Chas. A. Julian, the President, Dr. Way, being in attendance upon the session of the House of Delegates.

Dr. E. B. Glenn, of Asheville, presented a paper entitled: "Enchondromata; Report of Case Undergoing Malignant Degeneration."

This was followed by another paper read by Dr. L. B. McBrayer, of Asheville, entitled: "The Importance of the Work of the General Practitioner."

Dr. Way resumed the occupancy of the President's chair at 10 a. m.

THE PRESIDENT: Dr. Way: *Gentlemen:* This body will now proceed, without further ceremony, to discharge the important duty incumbent upon you once every six years of selecting the Board of Seven Medical Examiners of this State.

I will appoint to collect the ballots and make a report of the same to this body Drs. A. W. Knox, A. J. Crowell, George G. Thomas and J. E. Stokes.

Nominations are now in order, and I would suggest that nominating speeches be limited to two minutes. The tellers will, as nominations are made, place the same on the blackboard.

DR. JOHN ROY WILLIAMS: *Mr. President:* I rise to ask a personal privilege.

THE PRESIDENT: Dr. Williams.

Dr. Williams: *Mr. President and Members of the Society:* The Guilford County Medical Society has selected me, its President, to come to this Society and introduce a set of resolutions for its consideration. These resolutions were adopted by the Guilford County Medical Society in Convention assembled by unanimous vote, and they have requested me to bring them here and to present them to our Secretary, to read to you for your consideration and for your action.

The question of personal privilege, may it please the President and gentlemen, is that the Guilford County Medical Society is a component part of the North Carolina Medical Society, and that its individual privileges have been intruded upon, and that the privileges and rights of the North Carolina Medical Society have been called into question, and these resolutions have to bear on that controversy. When the Secretary shall have read it, I beg the privilege of discussing these resolutions.

The President: The Chair rules that Dr. Williams has failed to state a question of personal privilege; and further, that a special order is before this Society and, having been called, Dr. Williams is therefore out of order.

Dr. Williams: *Mr. President:* I appeal from the decision of the Chair.

The President: Those favoring the decision of the Chair will make it known by rising.

Dr. Booth: Has this anything to do with this special hour?

Dr. Williams: This is a question that involves the entire North Carolina Medical Society.

Dr. Parrott: Has it anything to do with the election of the Board of Medical Examiners?

Dr. Williams: Nothing whatever.

Dr. Parrott: Then, Mr. President, it is out of order.

The President: It is out of order, and is so ruled out of order. The question is, that upon sustaining the decision of the Chair, that Dr. J. Roy Williams is out of order. Those in favor of sustaining the Chair will make it known by rising.

Dr. Knox: *Mr. President:* I can not vote intelligently unless I know what the question of personal privilege is. One may have an idea, but if I know what the question is I can cast an intelligent vote. I want to sustain the Chair, because we ought to sustain our presiding officer, but I can not vote intelligently until I know what it is. We ought to let the Society know exactly what the question of personal privilege is to vote intelligently.

Dr. Williams: *Mr. President:* If the Secretary will read this he will see that it is in order.

The President: *Gentlemen of the Society:* The special order for this hour was called. Dr. Williams was recognized by the Chair on a question of personal privilege. As the Chair understood it that personal privilege was the right to introduce certain resolutions not related to the special order before the Society, but the exact purport and nature of which he did not state. The Chair ruled him out of order, as a special order had been called. An appeal has been made from the decision of the Chair. The question is on the sustaining of the chair. Those favoring the decision of the Chair will signify it by rising.

The Secretary: *Mr. President:* I don't see how I can count them, because a great many were standing before the rising vote was asked for.

The President: Those who propose to sustain the Chair will rise. (The vote is taken.)

The President: The Chair is sustained. Nominations for the Board of Medical Examiners are now in order.

Dr. Duffy: *Mr. President:* Preliminary to the election of the Board of Examiners I think it would be well for the Secretary to read section 5, under chapter V, on the election of officers.

The President: The Secretary will please read this section of the law.

The Secretary: "Any person known to have solicited votes for, or sought any office within the gift of this Society, shall be ineligible for any office for two years." (Laughter and applause.)

Dr. J. P. Turner: *Mr. President:* I rise, sir, to make a motion: That we have nominating speeches of as short an order as possible, because, as I understand it, there are a great many men running for office here this morning; that we limit the nominating speeches to two minutes, and that we do not have more than one speech to second each nomination. Seconded.

The President: It has been moved and seconded that nominating speeches be limited to two minutes, and that each nominee be limited to one seconding speech. Those favoring the adoption of it will signify it by saying aye. Those opposed, no. Motion carried.

Dr. F. Duffy: I rise, sir, to name a gentleman from the eastern section. In selecting our Board we have not only to consider the fitness of a man for this important office, but we must also take into consideration a man for geographical reasons. I desire to nominate Dr. J. L. Nicholson.

Dr. R. H. Lewis: I second the nomination of Dr. Nicholson. He has been most faithful to the interests of the Society. He is one of the strong men of our profession. Dr. Nicholson is one of the strongest men in North Carolina. He is the very best type of country doctor, and I hold that there is no higher type of the medical profession than a first-class

country doctor. (Applause.) He is gifted not only with common sense, but with a high character, a man of most excellent judgment, and would give recognized stability to the new Board. I heartily second his nomination.

The President: Dr. J. L. Nicholson is placed in nomination.

Dr. Albert Anderson: *Mr. President and Gentlemen of the North Carolina Medical Society:* I rise to place in nomination a man, in my opinion, well qualified to fill a place on the Board, a gentleman that I have known for nearly twenty-five years, nineteen years of which has been in close touch with his profession. As to the section read by the Secretary he is eminently qualified, for he has never asked for an office, but he has had offices and honors from the Society. He was once honored by being your orator. It is with great pleasure, therefore, that I put in nomination the man who has been your orator and thrilled you as no other orator ever was listened to by the North Carolina Medical Society. I refer to Dr. E. G. Moore, of Elm City; a scholar and a gentleman whom I think the gentlemen will place on this Board.

The President: Dr. E. G. Moore, of Elm City, is placed in nomination.

Dr. .....: *Mr. President:* I second the nomination.

Dr. J. P. Monroe: *Mr. President:* I rise to place in nomination a man who needs no introduction to the Society. We don't need handsome men, but he is a handsome man. He has been in active practice for a number of years. He has done splendid work in this Society, and I believe he has never been honored with any conspicuous office. He is a man who will do honor to this Society and to this section. And then, another thing: we have plenty of handsome men; we have plenty of educated men; but these are not the only kind we need. We need men of judicial and even tempera-

ment who can make and judge men, and weigh the examination papers as they should be weighed. I refer to Dr. W. W. McKenzie, of Salisbury.

The President: Dr. W. W. McKenzie, of Salisbury, is placed in nomination.

Dr. C. W. Mosley: *Mr. President:* I rise to place a man in nomination who is known to you all; a man of conspicuous literary attainments; a man who will have weight; he has been a member of the Society for twenty-two years, and has attended nineteen of the meetings. He is loved in his community; he is a man conspicuous in his profession. He is a man not so old that he has lost the fellowship of younger men, neither is he so young that he is out of place with the older men. I refer to Dr. H. H. Dodson, of Greensboro.

The President: Dr. H. H. Dodson, of Greensboro, is placed in nomination.

Dr. S. T. Nicholson: *Mr. President:* I desire to place in nomination the name of a man who for sixteen long years has, by his untiring energy, unswerving integrity, indomitable will and perseverance, with unceasing devotion and loyalty to the Society, demonstrated his fitness to fill this honorable position. He is a man of conscience, of wisdom and of strength; he is a man the east is pleased to honor, because he has never permitted their banner to trail in the dust when entrusted to him. Honor him, and he will honor this Society by discharging his conscientious duty to the State of North Carolina. I refer to Dr. John C. Rodman, of Washington N. C.

The President: Dr. John C. Rodman, of Washington, N. C., is placed in nomination.

Dr. H. B. Weaver: The people of North Carolina, through their representatives, the Legislature, have committed to the Society a trust almost sacred in its relation to the citi-

zenship of North Carolina, and that trust is that this Society shall elect seven men, who shall hold practically the destinies of the upbuilding of this Society in their hands. Gentlemen it takes many primary factors to constitute a man well qualified to fill the place of a medical examiner. In the first place he should have a sufficient preliminary education; in the second place he should possess a sufficient number of years of experience in the practice of medicine and surgery; and, in the third place, he should have a moral quality which so eminently befits every man who occupies this important trust. And, sirs, I believe I can present to you a man from Western Carolina who represents twenty of those counties, who is in every way fitted to fill that important office. He is a known book, read by all men. He is a man who, in every respect, will fill all the requirements of the Medical Board of Examiners, and that man is Dr. W. P. Whittington, of Asheville. He is a man of a judicial turn of mind; he is a conservative man; he is a representative man; he is a man we sent to the Legislature years ago, when our medical law was in jeopardy, and he helped us eliminate an obnoxious principle in legislation.

In all the States of the Union old North Carolina now stands and is quoted at the Medical Associations as one of the top States for medical education, and Dr. Whittington has been one of the prime factors in bringing this about. I therefore ask you to vote for Dr. Whittington, and the people of the western section of the State will thank you for it.

The President: Dr. W. P. Whittington, of Asheville, is placed in nomination.

Dr. D. A. Stanton: *Mr. President and Gentlemen:* There would be no end to the good things that could be said of one hundred or two hundred and fifty men in this assembly to-day as to their fitness for the high places we are going soon to distribute; but in the selection of these men the greatest care should be exercised and the merits of the men should be

known to the men who are going to vote; and while it is not necessary for me to detail the qualities of the man I am going to name, for twenty-two years he has been as interested in the Medical Society as any man in it. Only once out of this twenty-two years has he failed to be present at any of the sessions of the Society. He has contributed of his time, money and his ability to forward medical progress in North Carolina. The man I would like to see elected on this Board is Dr. C. A. Julian, of Thomasville, N. C.

THE PRESIDENT: Dr. Charles A. Julian, of Thomasville, is placed in nomination.

DR. A. J. CROWELL: I am not an orator, but since the man I am going to put in nomination needs no eulogy before this Society, and the mention of his name only is sufficient, I put in nomination Dr. Ben K. Hays, of Oxford.

THE PRESIDENT: Dr. Ben K. Hays, of Oxford, is placed in nomination.

DR. GEO. G. THOMAS: I wish to offer for your consideration the name of a man whose only crime is, possibly, comparative youth; but he has judgment, he has firmness, he has honesty, he has eminent ability, both in his own name and by inheritance. I refer to Dr. Edward J. Wood, of Wilmington.

THE PRESIDENT: Dr. Edward J. Wood, of Wilmington, is placed in nomination.

DR. H. L. MONK: It gives me great pleasure, gentlemen, as President of the Rowan Medical Society, to second the nomination of Dr. McKenzie, who has always been an ethical member and is a man of known ability.

DR. E. T. DICKINSON: *Mr. President:* I want to second the nomination and give all the influence I possess to the furtherance of the nomination of Dr. Chas. A. Julian and Dr. John C. Rodman.

Dr. S. A. Stevens: I desire to place in nomination the name of a man from the Seventh District. We have had no representative, and our county was among the first to organize on the plan of the American organization. The man whom I desire to nominate is eminently qualified in every respect; he is a man of good education, a graduate of the University of North Carolina, a man of good judgment and, most important of all, a man who will not throw his book open at every few pages and put down questions that he could not answer himself. This has been done in this Society and that has been done before the Board. The man I refer to is Dr. J. W. Neal, of Monroe.

The President: Dr. J. W. Neal, of Monroe, is placed in nomination.

Dr. Lockett, of Winston: *Mr. President:* I would like to place in nomination the name of the President of the Forsyth Medical Society, who has the unanimous endorsement of that Society. I take great pleasure in nominating Dr John Bynum, of Winston.

The President: Dr. John Bynum, of Winston, is placed in nomination.

Dr. A. B. Croom: I desire to remind the Society that there is a section of the State known as the "Upper Cape Fear." It has not been represented for more than twenty years; since the days of Dr. Thomas Haigh. It was then represented by the late lamented Dr. Haigh. We have another Dr. Haigh—Dr. J. H. Marsh—and I therefore take pleasure in placing his name before the Society.

The President: Dr. J. H. Marsh, of Fayetteville, is placed in nomination.

Dr. H. H. Harris: It gives me pleasure to second the name of the gentleman from Wilmington, Dr. E. J. Wood.

Dr. Booth: I wish to second the nomination of a man who is a born writer and orator. Sometimes the question is

raised whether this Examining Board ought to exist, and if they are doing the best for the profession in North Carolina. We ought to have upon that Board men who of themselves are capable of defending that Board, and I desire to place such a man in nomination who is very capable. There is no use saying more about it, he is fitted for this place. His name is Dr. L. B. McBrayer, of Asheville.

THE PRESIDENT: Dr. L. B. McBrayer, of Asheville, is placed in nomination.

DR. J. B. CRANMER: North Carolina has been fortunate in the past in having men of intelligence and high character upon its Board of Medical Examiners. We wish to keep up that reputation. I therefore place in nomination Dr. Charles T. Harper, of Wilmington.

THE PRESIDENT: Dr. Charles T. Harper, of Wilmington is placed in nomination.

DR. B. F. HALSEY: I desire to place in nomination Dr. Joshua Tayloe.

DR. J. E. BROOKS: Dr. Lewis has said the medical profession of North Carolina is higher than that of any other State in the Union. That is due to the Examining Board. There have been few cranks turned loose on the community. They are well balanced and trained to their work, and I wish to nominate a man this morning who will help to keep up this high standard, who stands upon the honor roll in the profession; a man who is a surgeon, who is equipped for his work, who is honest, fair and upright in his daily life-work, and who treats his fellow physicians as he would like to be treated. I nominate Dr. Thomas R. Little, of Greensboro.

THE PRESIDENT: Dr. Thomas R. Little, of Greensboro is placed in nomination.

DR. .....: *Mr. President:* I rise to second the nomination of Dr. Whittington.

Dr. Jno. T. Burrus: I rise to place in nomination a young man who has been very loyal to the North Carolina Society since he became a member. The gentleman to whom I refer is Dr. John Roy Williams, of Greensboro.

The President: Dr. John Roy Williams, of Greensboro is placed in nomination.

Dr. Williams: *Mr. President:* I wish to thank my friends for nominating me for this position, and I wish to say that I feel keenly the honor, but I must insist that my friend withdraw my name. I have done but little to uplift the name of this Society. I feel that I have much yet to do before I win my spurs, and I wish all who would vote for me that they will join me in the support of Dr. H. H. Dodson, of Guilford.

Dr. Burrus: I take pleasure in withdrawing Dr. Williams's nomination.

Dr. Monroe: I second the nomination of Dr. Harper, of Wilmington.

Dr. A. S. Rose: I wish to place in nomination the name of Dr. I. M. Taylor, of Morganton.

The President: Dr. I. M. Taylor, of Morganton, is placed in nomination.

Dr. Sam Stevens: I would like to suggest that we have some way of putting down in these lists the district to which they belong There are good men in each district. We want to give them a chance, and we do not know, in a good many cases, what district they belong to. I simply ask for information if there is not some way by which we can know to which district they belong. Of course we know they live in a certain place, but we do not know the district.

Dr. E. B. Glenn: I would suggest along that line that the name of the district be placed after each man's name on the blackboard—the councilor district.

THE PRESIDENT: The gentlemen making the roll will so list the nominees.

DR. BROWN: I second the nomination of Dr. Joshua Tayloe.

DR. MCANNALLY: I move the nominations be closed.

DR. LEWIS: I second the motion.

THE PRESIDENT: The motion is that nominations be closed. It is before you.

DR. PARROTT: I move not to close until everybody gets nominated. I am in favor of a motion in the way of a general amnesty, to nominate every one.

THE PRESIDENT: It is moved and seconded that nominations be closed. Those favoring it say "Aye"; those opposed "No." The Association voted loudly "No."

THE PRESIDENT: The motion is lost. We will proceed with the nominations.

DR. CHAS. T. HARPER: I desire to place in nomination a man who has taken an active interest in all the affairs of medicine in North Carolina, our good, jovial, kind, learned friend, Dr. Ben F. Halsey, of Roper.

THE PRESIDENT: Dr. B. F. Halsey, of Roper, is placed in nomination.

DR. J. B. SMITH: *Mr. President and Members of the North Carolina Medical Society:* I desire to place in nomination Dr. J. W. Ring, of Wilson.

Nomination seconded.

THE PRESIDENT: Dr. J. W. Ring, of Wilson, is placed in nomination.

THE PRESIDENT: Are there further nominations?

DR. R. H. LEWIS: I make a motion that all below the highest fourteen be dropped after the first ballot. That makes

a double number to choose from—all below the first fourteen—the lowest below the first or highest fourteen be dropped at the first ballot.

Seconded by several.

THE PRESIDENT: It is moved and seconded that all below the first fourteen be dropped in the second ballot.

DR. E. B. GLENN: I would like to amend that by saying all of the fourteen highest to be retained, as they stand, according to their vote.

DR. BURROUGHS: That isn't the old way we did things. We dropped the lowest.

THE PRESIDENT: It has been moved and seconded that after the first ballot all below the highest fourteen be dropped from further consideration. It has been amended that the fourteen highest be retained. Those favoring the adoption of that amendment will favor it by saying "Aye." Those opposed "No."

THE PRESIDENT: The amendment is carried.

(Cries of "Question.")

THE PRESIDENT: Those favoring the amended motion will please rise, and remain standing until counted. The opposite vote please rise.

THE PRESIDENT: The motion prevails, and after the first ballot all below the highest fourteen will be dropped from consideration.

DR. J. M. BLAIR: *Mr. Chairman:* I rise to second the nomination of Dr. W. W. McKenzie.

THE PRESIDENT: The Chair would be pleased to entertain a motion that nominations be now closed.

(The motion was made.)

THE PRESIDENT: It has been moved and seconded that nominations be now closed. Those favoring it say "Aye." Those opposed "No."

The nominations are now closed. The Convention then cast its vote.

Dr. Geo. G. Thomas: On behalf of the tellers I beg leave to announce that 243 votes were cast and five Examiners elected, with the following vote: Drs. J. L. Nicholson, 129; W. W. McKenzie, 157; H. H. Dodson, 124; Ben K. Hays, 153; and L. B. McBrayer, 130. Each having received a majority of the votes cast are elected. (Applause.)

In accordance with the resolutions passed governing this election only the nine out of the fourteen, as adopted by yourselves, out of the fourteen highest (five of the fourteen being elected) can be voted for on the next ballot. Gentlemen, prepare for the next ballot.

Dr. E. B. Glenn: I would like to offer a resolution that all but the two highest be dropped. Resolution declared out of order.

Dr. G. G. Thomas: Gentlemen, it has been suggested to me to again read to you a vote of the successful candidates. I will be glad to do so:

J. L. Nicholson, 129; W. W. McKenzie, 157; H. H. Dodson, 124; B. K. Hays, 153; L. B. McBrayer, 130. 122 necessary to elect.

Dr. John Roy Williams: Inasmuch as it requires considerable time to count these ballots, I wish to move that the Society proceed to consider the resolutions sent by me to you from the Guilford County Medical Society.

Seconded by Dr. Jno. T. Burrus.

The President: The Chair rules that the special order of election of the Board of Medical Examiners being on hand, the consideration of resolutions by this Society are out of order.

Dr. Williams: In view of the fact that this motion I have just made will in no sense interfere with the progress of

this election, and in view of the fact that Guilford County has a perfect right to send to this Society these resolutions. I appeal from the decision of the Chair.

The President: The decision of the Chair is appealed from. Those favoring the sustaining of the decision of the Chair—and that decision is the election of the Board of Examiners being on hand, until that matter is disposed of no further business can be transacted by this Society—that is the decision of the Chair. As many as favor the sustaining of the Chair in that decision make it known by saying "Aye." Those opposed, "No."

The President: The Chair is sustained.

Dr. Thomas: Gentlemen, the result of the second ballot is as follows: 206 votes cast. Necessary to elect, 104; of which Dr. John C. Rodman, having received 107, is elected.

In order they stand next:

C. A. Julian, 57; J. W. Bynum, 51; E. J. Wood, 46; J. H. Marsh, 45; J. W. Neal, 37; C. T. Harper, 36; I. M. Taylor, 26. One more man to be elected.

Dr. A. J. Crowell: *Mr. President:* We are consuming a lot of time, and inasmuch as Dr. Julian has not been elected in two ballotings, but is leading, I move, sir, that he be elected, if it is not out of order.

Motion seconded.

Dr. J. L. Haines: *Mr. President:* I object to that. We have a man here, Dr. J. W. Bynum, and we would like to see a fair election.

Dr. J. P. Monroe: I move after the next ballot, in the event of no election, all except the two highest be dropped.

So ordered.

Dr. G. G. Thomas: *Gentlemen:* The result of this ballot is: Dr. Julian, 47; Dr. Bynum, 75. Dr. Bynum is elected.

THE PRESIDENT: The following gentlemen having received a majority of the ballots cast in this election, are declared elected the Board of Medical Examiners of the State of North Carolina for the term of six years each:

Dr. J. L. Nicholson, of Richlands.
Dr. W. W. McKenzie, of Salisbury.
Dr. H. H. Dodson, of Greensboro.
Dr. Ben K. Hays, of Oxford.
Dr. L. B. McBrayer, of Asheville.
Dr. John C. Rodman, of Washington.
Dr. John Bynum, of Winston.

These gentlemen will meet at such hour as may suit their convenience, and organize the new Board.

DR. R. H. LEWIS: I move that the conjoint session of the State Board of Health with the Society be the first in order after dinner.

Motion carried.

THE PRESIDENT: The Society stands recessed until 3 o'clock this afternoon.

The newly elected State Board of Medical Examiners met during the session of the State Medical Society in Winston, received the papers and books of the former Board and duly organized by the election of Dr. Jno. C. Rodman, of Washington, President, with Dr. Benj. K. Hays, of Oxford, Secretary-Treasurer.

The assignment of subjects is as follows:
Dr. Jno. C. Rodman, Chemistry and Pædiatrics.
Dr. Benj. K. Hays, Materia Medica.
Dr. Lewis B. McBrayer, Surgery.
Dr. Wm. W. McKenzie, Anatomy and Histology.
Dr. Henry H. Dodson, Practice of Medicine.
Dr. John Bynum, Obstetrics and Gynecology.
Dr. J. L. Nicholson, Physiology and Hygiene.

Wednesday Afternoon, June 17th.

The Convention called to order at 3:30 with the President, Dr. J. Howell Way, in the chair.

The President: The Society will be in order. We will now have the conjoint session of the State Medical Society and the State Board of Health. Gentlemen, the Chairman of the State Board of Health, Dr. George G. Thomas, who will preside over the conjoint session.

Dr. Thomas: The State Board of Health is now open to business. We will be glad to have the report of the Secretary.

Report, "Conjoined Session State Board of Health," Dr. Richard H. Lewis, Raleigh, N. C., Secretary. (Read. See Index.)

Dr. Thomas: *Gentlemen:* You have heard the report. Are there any remarks thereon? Then, if there is no objection, the report will go on file.

Gentlemen, it is my pleasure to introduce to you Dr. Charles Wardell Stiles, Chief of the Department of Zoology. Washington City, who will give you a special address on "Soil Pollution, with special reference to Hook-worm Disease."

Dr. Stiles: Before passing to the reading of my paper I wish to say that Surgeon General Wyman sends his best regards to the Association, with his best wishes for a successful meeting.

I have taken the liberty of changing my paper somewhat although I shall speak on the same general subject as in the program. The title of my paper reads: (See Index.)

Dr. Thomas: I would like to say that I owe Dr. Stiles an apology for my error in introducing him. He is well known to this Society.

Dr. Julian: I am sorry that I did not get here in time to hear this very valuable paper of Dr. Stiles; but some years ago Dr. Stiles came to my town and assisted me in eradicating

hook-worm disease at the Thomasville Orphanage. At the time he assisted me he was satisfied the box privy was the source of the epidemic. I reported the matter to the trustees. We pulled down the box privies, dug a deep well, have water throughout the building, and after a few months we have never seen a case of the disease.

Dr. Lewis: I wish to call to the attention of the Society that the laboratory, as it already knows, is ready to make examination of the fæces. All they have to do is to write the laboratory at Raleigh for a container and send a sample of the fæces to the director of the laboratory.

Dr. Julian: The examination is very easily made by any doctor who is acquainted with the microscope by introducing the finger into the rectum, getting a small amount of the fæces, placing it on the slide, and in a few drops of water.

"Milk Supplies in Relation to Public Health," Dr. Tait Butler, State Veterinarian, Raleigh, N. C. (Read.)

Dr. Silvio von Ruck, Asheville: I have listened to Dr. Butler's paper with much interest, but he has made many statements which are radical and not proven.

He tells us that tuberculosis is transmitted from cattle to man with great frequency, and even that bovine tuberculosis is the almost exclusive source of infection for man, while human infection through sputum is of little importance.

He has misquoted Prof. Koch, who did not state that infection of man by milk of tuberculosis cows could not happen at all. Koch announced at the London Tuberculosis Congress in 1901 that he had not been able to produce infection in cattle with tubercle bacilli of human origin, that the human and bovine type of bacillus were not identical; that in the light of the rarity of primary intestinal tuberculosis and reasoning by analogy he did not believe that human infection from bovine sources was of frequent occurrence. He did not deny that might never occur.

There are two sides to this question, one of which Dr. Butler has entirely ignored, and aside from bacteriologic investigations and animal experimentation we have much evidence in support of Koch's position. This also requires consideration.

For example, it is well known that in Japan, before foreign cattle were imported, bovine tuberculosis was not prevalent. Further, the number of cattle in proportion to the population is so small that milk is not an ordinary article of diet. Nevertheless Japan has shown and continues to show as great a pro rata mortality from tuberculosis as other countries. In Sweden and Norway, where almost all children are nursed by their mothers, there is as great a percentage of tuberculosis mortality as in countries where cows' milk is more commonly used for infant feeding.

In Berlin records have been kept of the method of feeding infants and the number of deaths from tuberculosis is equally divided, as shown by statistics cited by Fraenkel, between those who were nursed by the mothers and those who were fed on cows' milk.

There is much more evidence of like character which tends to show that the tuberculosis of cattle is not the great source of danger that has been asserted, but an actual experiment on man has been made, although at the time not with the view of determining this question.

Baumgarten has given us the details of it. Based upon Rokitansky's theory of the antagonism between tuberculosis and cancer, a number of patients suffering from inoperable malignant disease were inoculated with bovine tubercle bacilli in the hope that their malignant disease might thereby be favorably influenced. All eventually died of their malignant disease and Baumgarten performed the autopsies. He found no evidence of tuberculosis and even critical microscopic examinations failed to reveal tubercle or tubercle bacilli.

As Dr. Butler has stated, it has been found that primary intestinal tuberculosis is not quite as rare as was supposed

at the time Prof. Koch made his announcement in London but while the thoracic glands may become affected as a result of ingestion of tuberculous material this, according to all results and investigations, is rare. It is generally conceded that by whatever route the bacillus enters, be this by ingestion or by inhalation, the first localization occurs in the nearest regional lymph gland. However, since 1901, the subject has been most carefully and painstakingly studied at the Imperial Health Bureau in Berlin and elsewhere, and it has been proven conclusively that in the majority of cases of primary intestinal tuberculosis the tubercle bacilli isolated from the intestine or mesenteric glands were of the human type. Up to the present time the cases in which bovine infections have been proved to have occurred in man are about 33 in number, 18 of which have been examined at the Imperial Health Bureau, while 15 are reported by other observers.

Apart from any danger to man from tuberculosis of cattle the question is of importance from an economic standpoint as well, and if, as appears, the danger to man is but little, it should not be necessary to destroy hundreds and thousands of cattle simply because they be shown to have acquired tuberculosis.

Besides, as Prof. Koch points out, we can protect ourselves from such danger as there may exist, by boiling the milk and cooking the flesh of such cattle as are or may be tuberculous.

With Dr. Butler's views as to the importance of cleanliness in our dairies, I was heartily in sympathy. Irrespective of the tuberculosis question, clean milk is essential, and for many other reasons we should use our influence to obtain it.

Dr. Burroughs, Asheville, N. C.: *Mr. Chairman:* I have listened to Dr. Butler's paper with interest. But there are one or two points on which I think that the doctor, as our State veterinarian, has not been sufficiently explicit.

I wish to state that no tuberculosis cow should be milked nor is milked at any dairy that produces healthful milk. The

herds are usually tested every six months. And all additions to herds are tested before being allowed to mingle with the cattle already tested.

Dairy cattle of Asheville are under the direct supervision of a veterinary surgeon; and all milk is under the supervision of one man, who tests milk at his will, with full authority to act.

The cattle are kept on the hills and in the valleys a portion of the day and also a part of the night. And the milk is collected twice daily.

The cattle are driven to a large corral with a shed attached to the stables where they are fed. In this shed the cattle are brushed off, and while they are being fed their teats are washed with an antiseptic solution. Following this come the immaculately dressed milkers with strainer pails. The milk is then carried to the chemist with his assistants, where it is standardized according to the requirements of Mr. Wilson in the Department of Agriculture of the United States Government. The milk is then iced and delivered in sealed glass jars.

One statement made in Dr. Butler's paper I do not understand, and I am certain that other members of the conjoint session do not understand, which I wish the doctor to explain, and it is this: that "thoracic tuberculosis is very frequently contracted from the cow's tail." (Laughter.)

Dr. Butler *closes:* Just a word in reply to the gentleman's (Dr. Burrough's) thrust. I didn't say it.

I know I didn't cover this subject thoroughly. If I had I would have kept you here until to-morrow morning. I stated in the start I wasn't going to talk to the specialists and investigators, but to the general practitioner.

I could meet Dr. Von Ruck's statistics with statistics if time would permit. I could tell you of investigators who have found as high as 41 per cent of the abdominal tuberculosis of children of bovine origin, but I did not have time to do it or to go into this matter fully.

I wanted to say further—and I thought I made that point clear—that the old idea that you can tell the mode or channel of entrance of the tubercle germ by the location of the lesion is no longer tenable. It is nonsense to say, because you find tuberculosis in the lungs, that the germ necessarily entered through the air passages. I said you could put the germs in the tail of the cow and the chances were the tuberculosis would develop in the lungs, not in the tail. Why? Because tuberculosis is primarily a disease of the lungs, and the germs go to where they like to live. They find the most suitable place for their development. You can inject the tubercle germs into the abdominal cavity, and you may feed them through the mouth; you may put them into the circulation or into any part of the system, in any way you like, and in the majority of cases you will get tuberculosis in the lungs. That is what I meant to say. Thank you.

My paper is better explained with the drawings given the Secretary.

Dr. Thomas: *Gentlemen:* The next subject to be presented is "Pellagra."

Dr. John Roy Williams: *Mr. President:* I rise to pray a special privilege.

Dr. Thomas: This is the conjoint session. When the State Society reconvenes I have no doubt the doctor can be heard. Is it relating to the Board of Health's business that we are on now?

Dr. Williams: No, sir.

Dr. Thomas: Well, sir, as soon as we are through with this meeting and we go back to the State Society I think you will receive every courtesy.

Paper on "Pellagra" read by Dr. J. E. Wood, of Wilmington, N. C.

DISCUSSION.

Dr. Sikes: *Mr. President:* I rise to introduce a motion in regard to order in the house, that we who have devoted our time to come and hear papers may hear them.

So far as we all know that was a most excellent paper read before this Society just now, and I know one-fifth of the men in the house did not hear this paper; and for the benefit of the Society I would be willing, at the expense of the Society, to place a doorkeeper at every available entrance to see that no member should leave or come in during the reading of a paper. They have the program. If they are not interested in the paper being read let them remain in the lobby; otherwise I think it would be well for the Society to adjourn and let us go to the sick, who need our services.

Dr. W. S. Rankin: I am in favor of doing anything that will produce order in the house, Mr. President. I pledge you my word, sir, I did not hear ninety-eight per cent of that paper. If that paper had been read loud enough, I believe the same attention would have been given it as was given to the valuable paper which preceded it.

"Pellagrous Insanity," Dr. John McCampbell, Superintendent State Hospital for Insane, Morganton, N. C.

DISCUSSION.

Dr. W. P. Whittington, of Asheville, N. C.: *Mr. President:* I just want to add a few words in the report of a case that I saw a few years ago. A young man in good physical condition went from Asheville to Pittsburg, Pa., and while in Pittsburg, after being there two or three months, he contracted what I now know to be pellagra. He went under the treatment of different physicians there for about two months, expecting to get well, but he got worse all the time. He stopped at Greenville, in East Tennessee, about a month where he was under the care of a physician he knew, expecting to improve, but got worse all the time. He then returned

to Asheville, having had the disease about four months after he left Asheville. He called to see me after he got back and I knew there was something the matter with the intestinal tract. He seemed to have gastro-enteritis. He had that characteristic erythemtous condition on the hands, extending up to the wrist, as far as the hand was exposed to the sun. He was very much emaciated and I thought he would die, but I put him on treatment for the symptoms, not knowing what the true cause of the condition was.

I want to mention the treatment, not knowing whether his coming back to North Carolina, where we have better corn, cured him, or he got well from some other cause. I gave him nitrate of silver, bismuth and opium. After that I put him on arsenic, and in three or four months the man appeared to be perfectly well, and is well to-day, five years, and has had no recurrence whatever.

Another case mentioned by Dr. McCampbell, of Morganton. It was a lady attacked with similar symptoms, but soon after she was attacked her mind became involved and she was sent to the asylum and there died.

I merely mention these cases. I did not know what they were at the time, but afterwards learned that they were possibly pellagra.

One of these, I think, originated in Pittsburg, Pa., and the other had not been out of Buncombe County, and was due, perhaps, to the infection received there.

Dr. I. M. Taylor, Morganton, N. C.: I have seen in my practice, I believe, five cases which I can account for as pellagra. Of these four have died; the other seems to have made a recovery. Three of these were men and two women. Three were intemperate people, and I accounted for their skin condition as the result of alcoholic abuse.

I confess that I have never made a diagnosis of the disease, and only since this discussion has opened in the journals and since reading the paper of Dr. Babcock have I recognized that I had been dealing with this condition.

I accounted for the general skin and nervous symptom as malnutrition, and in the case of two men and one woman directly due to alcoholic abuse.

Dr. Stiles: I have seen two cases, one in South Carolina and one in Alabama, both recorded by the physicians who had them in charge. In one of these cases my examination was made and coincident thereto parasitic infection was found.

The question is raised, Is not pellagra of parasitic infection? If it is, it is something new to me.

The two cases that I saw, in Alabama and South Carolina one is totally different from any symptom I ever saw.

In connection with the alleged cause it is interesting to note that it is particularly in Antwerp, Bremen and Copenhagen that complaints have been made regarding spoiled corn; and yet in that part of the world pellagra is unknown

I mention this as an interesting fact—that spoiled corn does not seem to cause the disease.

Dr. W. S. Rankin: I desire to report a case that is interesting in the light of this recent and valuable work on pellagra.

The patient, a young man twenty-five years of age, a student at Wake Forest College, has suffered every spring and summer for the last three years with a peculiar skin lesion.

The lesion, symmetrical in distribution, consists of an abnormally smooth, hairless, slightly red and sensitive skin about the size of a dollar, on the dorsal surface of the hands just above the metacarpo-phalangeal articulation.

Knowing Dr. Wood's interest in the relation of malaria to Raynaud's disease, and believing this case to bear some relation to some of the varieties of Raynaud's disease, I referred the case to him.

At his suggestion the patient began a course of Fowler's solution, but was unable to note much change in his hands.

In April of this year the patient consulted my colleague

Dr. Gaines, whose attention had been attracted by recent literature to the relation of certain skin lesions to intestinal intoxication as evidenced by well-marked indicanuria, and the relief of the skin lesion by medication addressed to his intestinal trouble.

On examining the urine a well-marked indicanuria was evident.

The patient was given sodium phosphate enough to produce two motions a day, with salol 5 grs. every four hours. Within two weeks the skin lesions had almost disappeared.

Since Dr. Stiles has mentioned it I am almost sure that two years ago I found this man with a very light uncinariasis.

Dr. Dalton: I would like to make the announcement, over at Nissen Park we have a supper prepared for the Society which will be ready at 7:30, and as soon as you can adjourn you take the cars going south at once.

Dr. Thomas: *Gentlemen:* It is not necessary for me to repeat such a pleasant invitation as that. I am sure it will appeal to you.

If there is no more business before the conjoint session we will now adjourn.

The session is now adjourned.

The President, Dr. Way, resumes the Chair.

The President: *Gentlemen:* It is moved and seconded that the Society take a recess until the conclusion of the supper at the park to-night, at which time the work of the session will be resumed, the annual oration and the annual essay will be delivered.

Those favoring the motion say "Aye." Those opposed "No." Motion carried. The Society stands recessed.

AT THE BANQUET.

Wednesday Evening, June 17th.

Informal session held in the dining pavilion at Nissen Park.

Dr. Hodges: *Ladies and Gentlemen:* Your unexpected courtesy on this occasion is exceeded only by my inability to adequately express my appreciation.

I recognize, however, that I am called upon not to speak personally but for my professional brethren, and in their name to return thanks to the good and generous people of this city for their most hospitable entertainment.

I never return in these latter days to this grand old State that I am not impressed with the generous impulses and loyal-hearted welcome of her people.

I recognize also, and admire more than I can tell you, the broad-minded sympathy of feeling and action that I always find in evidence, and which, to my mind, accounts in large measure for the wonderful development which is manifest on every hand.

In the State of my adoption we love relics and are too prone to cling to the things of the past, but here I find the old and the new side by side in sweet and suggestive harmony and accord, the one adorning and illustrating the other.

Since coming again to this historic and progressive city, after twelve years absence, I have been charmed by the beauty of your ancient landmarks, and amazed at the development of your commercial and industrial activities.

Since leaving the hotel an hour ago to come to this banquet I have been impressed with the numerous and varied manufacturing interests that were represented along the route. Woolen mills, cotton factories, tobacco factories, furniture factories, lumber mills and various manufacturing concerns of different kinds, and even an iron bed factory that appeared homelike to me, as representing hospital work, were all in evidence, and if what I saw on this ride be typical of the in-

dustries of this city it surely has a future of which you and we all may be justly proud.

In fact, when I look into the faces of the people of my native State, assembled here this evening from all sections, I feel proud of the land that gave me birth and feel that it is not yet what it will be, for with the continuation of such progress as has marked the past few years the Old North State will become a beacon-light of prosperity, seen and envied by all her enterprising sisters.

I am confident, too, that some of this great enterprise, some of this successful development, if you please, is due, not alone to the men who are sounding for us the true note of success but to their helpmeets who on such occasions as this are ever foremost in good works, and always doing so much for the future of the land they love so well.

In conclusion, I know I but voice the sentiment of all my friends and brothers in the medical profession when I return to the ladies of the Hospital Committee, both Senior and Junior organizations, our most heartfelt thanks for their beautiful and bountiful provision for us here to-night.

> "They talk about a woman's sphere
> As though it had a limit;
> There's not a life, or death, or birth,
> That has a feather's weight of worth,
> Without a woman in it."

(Applause.)

The Society recessed for half an hour, when the session was resumed in the open pavilion.

The President, Dr. Way: *Gentlemen:* I have the pleasure and honor of introducing to you Dr. Charles S. Mangum, of Chapel Hill, who will deliver to you the annual oration. (Applause.)

"The Annual Oration, the Physician and Education," Dr. Mangum.

The President: *Ladies and Gentlemen:* I now take pleasure in presenting to you Dr. Thomas R. Little, of Greensboro, who will read the Annual Essay of this body "The Lines of Progress in the Practice of Medicine."

The President: On behalf of my colleagues of this Society I wish to extend our most sincere thanks for the presence of the ladies and the gentlemen of Winston at this, our evening session, and especially for the most delightful and superb entertainment in the adjoining building with which we have been regaled.

I also appreciate your interest and attention in these two carefully prepared dissertations upon the physician and modern education and lines of modern progress in the treatment of disease; but before telling you good-night I want to introduce another number that is not upon the printed program.

We have been in session for the two days past in your beautiful and progressive city, and we have been hard at work, and for long and continuous sessions of ours mind has been pitted against mind, in consideration of the serious and scientific subjects that engage our attention at these annual meetings, and we have not had much time for fun. But the spirit of fun is in us, even though we don't look like it, and we have with us to-night a gentleman whom this Society has for more than a quarter of a century been delighted to honor, and its honors have always been placed where they were merited. He is a gentleman accomplished and cultured in every sense of the word; he is a skilled and learned physician, who is the head of the Health Department of the State of North Carolina, and who while the two millions of men, women and children in this State sleep it is said that Dr. Lewis never sleeps because he is always awake, looking out for the good of the health interests of the people of North Carolina.

But Dr. Lewis is not only a great health officer and a great physician and a great gentleman, but a very gifted story teller as well, and I now ask Dr. Lewis to tell us one or two—I will not limit it—of his delightful stories. (Applause.)

Dr. Lewis: *Mr. President, Ladies and Gentlemen:* Whenever I am called on unexpectedly to make a speech, I am always reminded of the story of old Uncle Simon, one of those old-time darkies, who, as you know, are generally

"mighty po'ly," "way down in de low-grounds er sorrow," as they say.

One night Uncle Simon was walking along the street in a little village, talking out aloud to himself about his ailments and troubles, and wound up his soliloquy by wishing "dat de good Lord would send down de Angel Gabrul, and ca'y ole man Simon home to his ole Marster, where he belong." Some mischievous young men overheard him, and some time after he had got home, they went to his cabin and knocked at the door. "Who dat?" said the old man. "It's the Angel Gabriel, come to carry old Simon home to his old Marster." "Lord, Marse Gabrul, ole man Simon done move 'way f'um here two ye'r ergo." (Laughter and applause.)

I always feel like old man Simon. At the same time, after the very flattering introduction by my friend, I could not be so ungracious as to fail to respond.

I was very much pleased with what the orator had to say about our State Board of Health. Every doctor is essentially the health officer of the families in which he practices, and without the support and cooperation of the medical profession, it is practically impossible, no matter what legislation may be secured, to carry out the principles and practice of sanitation.

I hope the words of the orator may sink deep into the hearts and minds of my brethren who heard him, so that they may lend their aid to this great work.

I want to give you a piece of advice in regard to the handling of a mule.

A negro was driving a mule hitched to a cart through one of our Southern towns, when she balked. Failing to get her to go, he went into a near-by store and asked the proprietor if he would let him "forme" to his Marse Tom. He agreed, and the following conversation, at the colored end, ensued. "Is dat you, Marse Tom? Yaas, sir, dis is George, sir. Marse Tom, ole Jinny done balk ergin, sir. Oh, yas, sir, I wo' the hoop out on her de fus' thing, but it never done her

no good, sir. Yas, sir, I put dirt in 'er mouf, and I tied er string roun' her y'er, too, sir; but she never move, sir. Yas, sir, I built er fire under her, sir, and de cyart all burn up, sir, but she's er standin' right dar, sir. Oh, yas, sir, I tuck de things out'n de cyart an' put 'em on de sidewalk befo' I built de fire, sir. Naw, sir; naw, sir; I never twis' her tail, sir; but er gemmum fum de Nawth he come arlong, sir, an' he twis' her tail, sir. Yas, sir; dey sont off to de liv'ry stable, an' got a ca'age an' tuck him to de horspittle, sir. Naw, sir; I ain't heerd, sir." Applause. (Encore.)

I will tell you a brand new story I have just heard from my friend, Dr. George Thomas, who is the President of our State Board of Health, and likewise Chief Surgeon of the Atlantic Coast Line Railroad. He is a splendid story-teller and I wish he was here to tell it. I can't do it justice. The point of the joke, the doctor said, was that it was on himself. Recently the doctor was jollying a very homely railroad friend on his looks, when turning to the gentleman with him, he said: "Mr. E, you see Dr. Thomas's bald head and his white hair and his white moustache? He has dark eyebrows still, but he reminds me of a love-feast I heard of the other day. The minister called on different members of the congregation to give in their experiences, asking Brother Browning if he could not get up and tell the people what the Lord had done to him. He did so, recounting the many blessings he had received. Then he called on Sister Fairfield and others. Finally his eye fell on the face, then in repose, of a gentleman who had suffered a stroke of paralysis six or eight months before, and who was peculiarly affected in that whenever he attempted to talk one side of his face would spasmodically draw up, and he remarked, "Brother Jones, won't you kindly get up and tell the people what the Lord has done for you during the past year?" Rising to his feet, in his tottering, paralytic way, one side of brother Jones's face flew up with a jerk, and he remarked, "Well, He mighty nigh ruint me." (Laughter and applause.)

[After the remarks of Dr. Lewis, the President, Dr. Way, declared the Society recessed until 9:30 Thursday morning. Thus closed the social evening, one of the most pleasant of the Society's meetings during the week. The local profession and the ladies of Winston-Salem had been most lavish and untiring in their efforts to make the social evening of the session a complete success, and it is a pleasure to here record the opinion that never has the Society in its history been more charmingly entertained. The hall was beautifully decorated and the more than five hundred ladies and gentlemen who graced the banquet board were delighted with every feature of the occasion. The refreshments were most abundant and choice, the serving hospitable to a degree, and the occasion, while wholly informal, with no addresses save the impromptu remarks of Dr. Hodges, one to be recalled with pleasure.—Editor.]

Thursday Morning, June 18th, 9:30 a. m.

The President, Dr. Way, in the chair.

The President: *Gentlemen:* The meeting will come to order.

Dr. Frank Duffy: *Mr. President:* I ask unanimous consent to present a very brief resolution on behalf of one of our oldest members.

The President: Without objection, consent will be given.

Whereas, Dr. J. A. Reagan was to have attended the meeting and contributed a paper thereto, but has been prevented by illness:

Be it Resolved, That we regret his absence, and sympathize with him in his affliction.

Seconded by Dr. Stanton. Unanimously carried.

The President: *Gentlemen:* We will resume consideration of the program at No. 30—"The Relation of the General Practitioner to Gynecology," Dr. J. E. Stokes, Salisbury, N. C. (Read.)

Dr. Weaver: *Mr. President and Gentlemen:* To my mind this is one of the most serviceable and practical papers that has been presented to this Society. It truly divides the subject between the general practitioner and the gynecologist, and I am glad to hear the expressions coming from such an efficient specialist as we have heard to-day. The time is now past when everything is relegated to the specialist. From my experience I make this statement: that two-thirds of the cases in gynecology are attributable to the want of perfect nutrition in the body of the female, and if the general practitioner takes due vigilance of his case and looks at the details builds up the system, obtaining perfect metabolism, taking all the general symptoms into consideration, he will prevent many capital operations.

A great majority of the cases lack proper management: which is in the hands of our general practitioner.

Constipation is one of the most fertile sources of these minor diseases of the female. Therefore, the thing to do is to treat the system in a general way, by the general practitioner, and many times he can so avert the calamity which comes in the after days.

The time is not gone yet when a properly fitted pessary, or a tampon, in the hands of a general practitioner, may lift the uterus up from its displacement, giving it good nutrition, and by the tonic treatment of the general system, and the removal of toxins, and the open air exercise, these minor diseases can be cured.

But, mind you, there is a line that we must draw, where the practice of the general practitioner stops and the surgeon takes charge—whenever the abdomen is to be opened. Whenever we invade the peritoneum, then the general practitioner should stop and deliver it over to our brethren, who make a specialty of abdominal operations in surgery. Therefore this paper is of importance to us all—we general practitioners—and we should take heed to the things that it contains, and we will all profit a great deal by this timely advice.

Dr. Stokes: I have nothing further to say. I thank the doctor for discussing my paper.

Dr. J. T. J. Battle: *Mr. President:* I have a motion that I wish to bring before this Society, and I move that a committee of three be appointed to confer with the Publication Committee of this Society in regard to some apparent discrepancies in the different prints of the Constitution and By-Laws of the Society. I hold in my hand a copy of the Constitution and By-Laws as adopted at the Hot Springs meeting in 1903. In comparing this with the proceedings since then I find that there are some differences, which may be typographical or errors that could easily slip in, and to get these two copies together, I make this motion.

It is sometimes courtesy to appoint the mover of a motion on that committee, I believe. To assure you that I do not want to be on that committee, I include in that motion, as Chairman of that Committee, Dr. Kent.

Seconded by Dr. Weaver. Motion carried.

The President: The motion prevails. Have you further suggestions as to the personnel of the committee?

Dr. Battle: No, sir; none whatever. I just didn't want to be on it myself.

Dr. Kent: *Mr. President:* As long as Dr. Battle has made that motion and dodged, very nicely, as he thinks, the responsibility of doing that work, I move, sir, that Dr. Battle be made one of that committee.

The President: It is the province of the chair, I believe, to appoint, and the chair was only asking the question as a courtesy. I take great pleasure in appointing Dr. Battle. Have you further suggestion as to the other member?

Dr. John Roy Williams: As we have present with us to-day one of the original drafters of the Constitution and By-Laws, I move that he be included on that committee. I refer to Dr. M. H. Fletcher.

Dr. J. P. Turner: While we are on this little business for the good of the order, I would like to bring up a matter that I have been appointed to bring up, by the Guilford County Medical Society, for the good of the order, and would like to present this matter to the Society this morning for its consideration, if it is in order.

The President: What is the character of the matter that you refer to, Dr. Turner?

Dr. Turner: It is a matter of the resolutions passed at a called meeting of the Guilford County Medical Society and placed in the hands of its members to bring here and present before this Society for its consideration. This resolution will explain itself. It embodies a great many principles looking toward the betterment of the conditions of the profession of North Carolina, and, as I consider it, is for the good of the order. I would like to read them to you.

The President: I would just ask, doctor, if this is a matter of an ethical character, or involving ethical questions?

Dr. Turner: I should say that it was, to a certain extent, but it is a matter that we, as a County Medical Society, think that the whole profession of the State of North Carolina is interested in; if it is not, it should be, because if it is not taken up at this meeting and discussed and disposed of, it is going to work detriment to our Society. I would like to read sir, the resolution, if you will permit me.

The President: *Dr. Turner:* Under the section of our Constitution which reads: "All questions of an ethical nature brought before the House of Delegates, or the General Meeting, shall be referred to the Council, without discussion." Under that section of the Constitution I will refer consideration of that matter to the Council of this Society, and request that you file the papers with the Secretary, who will at once place the matter before the Council, and the Council will designate a time for the consideration of this ethical matter. That is the decision of the chair upon this point.

Dr. Turner: Will you allow me just a few words on this question?

The President: Certainly, Dr. Turner.

Dr. Turner: I understand that law that you have quoted thoroughly; I think that a matter of ethics—as differences occurring between brother physicians in some other county in the State, that has been taken up by the local society, has gone by the Board of Censors there and appealed from their decision to this body—I agree with the chair that it is right; but in this instance, gentlemen, this is not a matter of ethics. involving one, two or three men, or one, two or three county medical societies; it involves every member of the North Carolina State Society, and every honorable physician in the United States, and I respectfully submit, Mr. Chairman that we be heard, because, if it is not heard here, it is going to hurt us, and hurt us bad.

Dr. Parrott: Mr. President, since you have permitted Dr. Turner to make a few remarks—

The President: *Dr. Parrott:* Where will the line be drawn?

Dr. Parrott: I would be pleased, sir, if the chair would extend the courtesy. I suppose that I could extend the motion and ask the chair to move that it is in order.

I move that on account of the intense interest manifested by the profession in regard to this matter, because of the section which the chair has read of the Constitution and By-Laws, because of the undisputed fact that the profession of North Carolina is an honorable one and means to do right and to do it in order, that the matter be referred—since the doctor has stated that the matter was a question of ethics—to the Board of Councilors, in accordance with the Constitution, and that the Board be urged to assemble at the earliest possible moment, take such action as they see fit, and refer the matter back, as they see fit, to us for consideration.

Dr. Bahnson: I beg to submit an amendment to that motion, to this effect: That the Councilors be invited now forthwith, to sit and hear, in the presence and in the full hearing of this body, these charges. (Applause.)

Dr. Parrott: I believe, Mr. Chairman, that the gentlemen present are extremely anxious that this matter be disposed of in an orderly and proper way. So far as I am personally concerned, I believe that it should be done, and I am confident that the profession of North Carolina intend to do right toward every member, regardless of personal prejudice or personal feeling, and I am satisfied that if there is a man in North Carolina who means to do the square thing, that man is Dr. Bahnson. (Applause.)

I believe, sir, that Dr. Bahnson would lead the profession of North Carolina aright in this matter, and, so far as I am concerned, whenever the time comes that my judgment must run contrary to his, I would do so with fear and trembling, because I feel that Dr. Bahnson's experience and right judgment would make him competent to judge. But, gentlemen, there is a time when the best of us are swept off our feet because of some catchy statement.

Now, Dr. Bahnson's amendment is all right, if the Society has time to go into the matter. Therefore I personally do not object to that amendment except on the ground that it would take up too much time to wash linen here, when it ought to be threshed out and brought to us here, when it has been deliberated upon.

Dr. Knox: *Mr. President:* In speaking as a second to Dr. Bahnson's motion, I think I can put it upon a broad ground that will appeal to every member of this Society. I believe Dr. Bahnson's motion is the correct one.

Dr. Parrott: I am not kicking on his motion at all.

Dr. Knox: I believe it is right to pass Dr. Bahnson's motion, for two reasons: The first and highest of all, in my

judgment, is that this, in my opinion, is a direct message—a special message—from the Guilford County Medical Society, a company of sixty-three of the best physicians of the State; a special message from the Guilford County Society to the Medical Society of the State of North Carolina, and I think that the Medical Society of this State ought to listen respectfully to a special message of that kind. (Applause.)

I believe that if we refer this thing, in a preliminary way, to the Board of Councilors alone, and they take it into a private room and consider it, and then have to bring it before our body, with many of the gentlemen obliged to go off on this 11:35 train, we will have but a handful to hear it. Dr. Bahnson's motion covers the ground absolutely: that it shall be referred, in an orderly way, to the Board of Councilors, but that the Society respectfully requests those Councilors to have that hearing in the Society.

The President: *Gentlemen:* The Constitution says that the decision of the Council in all such cases shall be final.

Dr. Bahnson: *Mr Chairman·* Excuse me; may I have the floor a moment?

The President: Certainly.

Dr. Bahnson: We have not a particle of objection to the decision of the Council being rendered on the evidence in our presence, and we will be glad to hear their decision as soon as they have heard the evidence, and if it is not satisfactory, the Constitution provides for a referendum, which will override the decision.

The President: *Gentlemen:* The question is upon the addition of the amendment of Dr. Bahnson—that the Council be invited to sit in the matter, in the presence of this body. Those favoring the adoption of the amendment signify it by saying "Aye." Those opposed, "No." Motion carried.

The President: Now the question is the original motion, as amended by Dr. Bahnson. Motion carried.

The President: That matter is referred to the Board of Councilors, with the request that they meet at once and consider it in this hall. The Secretary will call the roll of the Council, that I may formally place this matter in their hands for immediate action.

Dr. Knox: *Mr. President:* I understand the amendment to be that they be respectfully requested to sit and hear this thing in the body of this Society.

The President: That was the understanding of the chair.

Dr. Bahnson: Unless I am misinformed—I hope I am—the roll-call will disclose the fact that urgent business, either from this or the other side of the line, has called the majority of the Councilors to their respective homes, and therefore I wish to ask the desire of the Society whether they will hear this message from the Guilford County Medical Society before those Councilors, whether a quorum or not, who are present?

The Secretary: As directed by the President, I will call the roll of Councilors, and ask all who are present to please respond. (The roll is here called.)

I find, Mr. President, two Councilors respond to the roll-call.

The President: Now, gentlemen, I think we can solve that difficulty for this body by appointing as temporary Councilors, in the absence of a majority of the Council, members of this body who are present to temporarily assume the functions. (Applause.)

Dr. Bahnson: *Mr. Chairman:* I hope to get up such a committee as will act without delay.

The President: *Dr. Bahnson:* You will excuse me, sir. The chair is promptly attending to this business.

Dr. Bahnson: I will ask a personal privilege: The Constitution gives the President no right to appoint Councilors in the place of those who happen to be absent.

THE PRESIDENT: The ruling of the chair to that objection is that the general order of procedure in all parliamentary bodies permits the presiding officer to appoint temporarily to fill vacancies, and in pursuance of that, the Secretary will call the roll of the Councilors, and the chair will proceed to fill the place of those who are absent. I may ask Dr. Bahnson to help me. (Laughter and applause.)

THE SECRETARY: The First District, Dr. Oscar McMullen. (Dr. McMullen was absent.)

THE PRESIDENT: Is there any gentleman from the First District in the hall?

(Counties of the First District called. No one present from that district.)

THE PRESIDENT: There appearing to be none present from that district, we will pass that, for the present; I am sure a majority of the districts are represented.

THE SECRETARY: Dr. R. H. Whittaker, Kinston. (Counties of that district called.) (Dr. Whittaker absent.)

THE PRESIDENT: I appoint Dr. J. M. Parrott as temporary Councilor for that district.

DR. PARROTT: *Mr. President:* I can not serve. It is absolutely impossible. I am unwell to-day.

THE PRESIDENT: The chair, for the present, will gently insist upon Dr. Parrott's assisting us in this delicate and important matter.

DR. A. W. KNOX: I wish to say one word. I know Dr. Parrott has the courage of his convictions to do right, and his determination not to shirk a duty. I am satisfied with his inability to act in this important matter, and I ask that he be excused.

THE PRESIDENT: Is it the pleasure of the body that Dr. Parrott be excused?

Dr. Knox: I move that Dr. Parrott be excused on h own motion.

The President: Dr. Parrott is excused and Dr. Laughinghouse is appointed from that district.

The Secretary: The Third District, Dr. F. H. Russell. (Dr. Russell absent.) (Counties called.)

Dr. Everitt: Dr. Harper, from Wilmington, is here.

The President: Dr. Harper will sit with the Councilors.

The Secretary: The Fourth District, Dr. Albert Anderson. (Counties called.) (Dr. Anderson is absent.)

The President: Dr. E. T. Dickinson, from that district, is appointed.

The Secretary: Fifth District, Dr. J. F. Highsmith (Present.)

Sixth District, Dr. H. A. Royster. (Absent.)

The President: Dr. Royster is absent. I will ask Dr. A. W. Knox to serve from that district.

The Secretary: Seventh District, Dr. C. M. Strong. (Absent.)

The President: Is Dr. J. W. Neal present? (Absent.) Dr. J. M. Blair? (Absent.) Dr. Sam Stevens is appointed from the Seventh District.

The Secretary: Eighth District, Dr. J. B. Smith. (Present.)

Ninth District, Dr. I. M. Taylor. (Present.)

Tenth District, Dr. J. A. Burroughs. (Absent.)

The President: Dr. L. B. McBrayer will act as Tenth District Councilor.

The members of the Council will please gather around this table in front of the speaker's stand. I will then declare a recess of the Society, pending a report of the Council as soon as the Council is duly organized.

PROCEEDINGS OF THE COUNCIL.

The members of the Council, as per President's Way's request, gathered in front of the President's chair and proceeded to organize.

Dr. I. M. Taylor was elected President of the Council and called it to order.

Dr. Taylor: The election of the Secretary is in order. Will the Council name a Secretary?

Dr. Stevens elected Secretary of the Council. Dr. Taylor advised the President of the Council's being organized and ready for business.

The President, Dr. Way: The gentlemen of the Society will be in order.

The Council has assembled, as per your instructions, and are now duly organized and ready for the transaction of business. Dr. I. M. Taylor has been elected President of the Council; Dr. Stevens, Secretary.

The general meeting of the Society will now be recessed and its members may sit, as per its instructions, with the Council; and to him, as Chairman and presiding officer of that Council, I tender the gavel to its duly elected President pro tem., Dr. Taylor.

Dr. Taylor: The Council will come to order, and the chair will hear the pleasure of the Council.

The Council particularly requests that we preserve order in the hall, or we shall have to remove to a committee room. Will there be order?

Dr. J. B. Smith: *Mr. Chairman and Members:* I move that this be referred back to the house for their decision.

Dr. Knox: There is no business before us at present. The gentleman moves that this matter—I do not know what matter—be referred back to the house.

It seems to be in order that the business to be brought be-

fore the Council should be succinctly stated, so that the Council may then decide what course of action it will take. This, as I understand it, is a respectful message from a duly organized County Medical Society—a component part of the State Society. We have decided that the Council, sitting in the presence of the State Society, will hear this matter. We are entitled to a plain statement of what the matter is. It seems to me it would be the proper course for the Council to pursue to ask the messenger from the Guilford Society to state what the Guilford Society proposes to say to the Council and to the State Medical Society.

Dr. McBrayer: *Mr. President:* So far as I am informed, there is no business before this Council. I would suggest that if any member of the Council, or any one else has any business to present to this Council, that it be done at once; otherwise that we adjourn.

Dr. Taylor: The chair holds the Council open for communications, through the Secretary.

Dr. Stevens: *Mr. President:* I have a communication here which will explain itself. I will read the card first:

"THE BIGGS SANITARIUM, GREENSBORO, N. C.

"For the Cure of Chronic Diseases.

"Massage, Physical Culture, Electricity, Hydrotherapy, Electric-light Baths, Mechanical Vibration, Diet, and other natural methods

"Especially Successful

"In the cure of Rheumatism, Digestive Disorders, Paralysis, Neurasthenia and other diseases of the Nervous System.

Correspondence with physicians regarding cases requiring special physiological treatment respectfully solicited.

"Charges moderate.

"The Biggs Sanitarium, Greensboro, N. C."

(The following is the letter from the Guilford County Medical Society):

The attached card is clipped from the June issue of the *Charlotte Medical Journal,* which is being represented to us as being the "Official Organ" of the North Carolina Medical Society by one of its duly authorized agents.

Therefore, the Guilford County Medical Society wishes to enter an emphatic protest against the publishing of this advertisement, which tends to suggest, or does in fact suggest, the North Carolina Medical Society as being endorsers of this man whom we have endeavored to suppress by law. Therefore we beg to offer the following resolutions and have their adoption:

Resolved, That in the publication of the above-referred-to advertisement, the editor of the *Charlotte Medical Journal* has openly offered a gross and unwarranted insult to every member of this Society.

Resolved, 2. That we recommend that we withdraw our patronage from the *Charlotte Medical Journal* until its pages shall have been purged of all such unethical advertising as above referred to; and,

Resolved, 3. That we recommend that we refuse to patronize said *Journal* until the editor shall have made satisfactory apologies to this Society and to the Guilford County Medical Society.

Introduced by instructions from the Guilford County Medical Society, in convention assembled, June 15, 1908, in the State Society in session at Winston-Salem, June 18, 1908.

(Signed) JOHN ROY WILLIAMS, *President.*"

DR. TAYLOR: *Gentlemen:* The resolutions from the Guilford County Medical Society are before you for consideration. What is your pleasure?

DR. KNOX: *Mr. President:* I desire to call attention to one fact: We do not desire to impugn the truthfulness of anybody, but this clipping—we believe the gentleman who made the statements—that that clipping is taken from the *Charlotte Medical Journal,* but there is nothing on the clipping itself to show that it was taken from the *Charlotte Medical Journal.* I have a copy of the *Journal* here in my hand. I will compare them. (The two papers were found to be the same.) That comes headed *The Charlotte Medical Journal,* on page 6, June, 1908.

DR. MCBRAYER: *Mr. President:* I want to state, sir, in explanation of what I am going to say, that I have no desire whatever to refuse to this gathering of medical gentlemen the privilege of hearing any discussion upon this matter that they care to bring up. I take it from the applause that

has been rendered here this morning that this matter is of great interest, and that they are anxious to hear it. At the same time, sir, if I am going to sit with this honorable Council, I should like to have everything in order and in proper form, and, as I read this communication and study it, there is no evidence whatever that this comes from the Guilford County Medical Society. The paper is not signed by any one.

Dr. Knox: The gentleman who read it, I understood to read "by John Roy Williams, President." It is signed in typewriting.

Dr. McBrayer: It isn't signed by any one, and no seal of any Society is attached.

Gentlemen, I want you to understand that I have no objection to this, but I am not willing to consider a document that is brought up in this way, and for those reasons, Mr. Chairman, I would like for you to take the paper.

Dr. Taylor: The chair rules that the paper will not be considered unless it is signed or a personal representative of the Guilford County Medical Society appears before the Council. Time will be given for that, and we will receive it under those circumstances.

Dr. J. Roy Williams: As President of the Guilford County Medical Society—if I may be heard by this honorable Council—I beg to say that I will sign that, and, as for the seal, every member of the Guilford County Medical Society present will sign it.

Dr. Taylor: The chair will receive the paper signed. The suggestion has been made that this paper should be signed officially by the President and the Secretary.

The Council is open to receive the communication.

Gentlemen, the paper is before us formally, and you will take action as you think best. We find that the paper has been signed by Dr. John Roy Williams, President, and Dr.

Edmund Harrison, Secretary of the Guilford County Medical Society. What is your pleasure?

Dr. J. P. Turner: As a member of the Guilford County Medical Society, who sends this message to the State Society, I would like to know whether it would be in order or not for a member of that Society to appear before the Council.

Dr. Taylor: That is the pleasure of the Council. I am open to a motion.

Dr. Knox: I move that all the members of the Guilford County Medical Society be invited to make any remarks on this subject which seem to them proper. Our source of information lies in the Guilford County Medical Society. We know nothing but rumor—hearsay—of ourselves we have no knowledge. The only accurate, detailed knowledge that is being talked about all over this Society is in the membership of the Guilford County Medical Society. I move that the chair request all members of the Guilford County Medical Society, who so desire, to address this Council.

Dr. Stevens: I move that the Guilford County Medical Society speak through one member.

Dr. Knox: I do not accept that, unless it is broadened—unless the Medical Society desires to speak through one member. We should hear a matter of this kind with an open, broad, dispassionate mind.

If it is acceptable to the Guilford County Medical Society to put their sayings in the mouth of one man, it is all right; but if all the Guilford County Medical Society desire to speak, if it take us twenty-four hours, we ought to hear it.

Dr. McBrayer: It certainly is with great reluctance that I occupy the position that I do. However, I am not "unwell to-day" at all—(laughter)—but I will offer an amendment to Dr. Knox's motion, and in doing so I will state so far as I am individually concerned, if we have to hear the

sixty-three members of the Guilford County Medical Society, I have no objection to hearing the other five gentlemen who are present in this room, and I do not exclude anybody before the Council meeting to make any remarks.

I therefore amend the motion of Dr. Knox by saying we will hear any one who has anything to offer on the subject.

Dr. Knox: I made a motion to hear any member of the Guilford County Medical Society in regard to this matter. An amendment was made to limit anything said by the Guilford County Society to one member. There were two members of the Board of Councilors who did not know what my motion was. Accidentally and incidentally, without intending not to pay attention, two gentlemen didn't hear the motion. I desire to repeat my motion.

Dr. Taylor: Your motion has a second. I said the amendment had none.

Dr. Knox: With your permission I will restate my motion, on the distinct ground that one member of the Board of Councilors told me that he did not hear what my motion was. If the Guilford County Medical Society desires to make one only of its members spokesman, and no one else, it is satisfactory to the Board of Councilors. If, however, the Guilford Medical Society does not so desire to limit its speech to the mouth of one man, I think we ought to hear anything that any member of that Society desires to say. That is our only source of information.

In investigating a thing of this kind, it is our duty to proceed in an orderly manner. It is our duty to have all of the information obtainable, and unless the Guilford County Medical Society especially desires to limit its speech to the mouth of one man, we should exclude them all.

Dr. Taylor: Is there any discussion on the motion of Dr. Knox?

The question is that we shall hear any or all communica-

tions from the Guilford County Medical Society in support of the resolutions presented to the State Society. Those favoring this motion will say "Aye." Those opposed, "No."

Dr. Knox: I believe that does not correctly state my motion. My motion was, "that the Board of Councilors hear from the membership of the Guilford County Medical Society in this matter; that if the Guilford County Medical Society desires to limit what it has to say to the mouth of one member, it is acceptable to the Board. If, on the contrary, the Guilford County Medical Society desires that its several members shall speak, the Board will hear them."

Dr. Taylor: You have heard the motion of Dr. Knox. Those favoring it will say "Aye." Those opposed, "No." The motion prevails.

I think I represent the Council in asking the Guilford County Medical Society for each man to speak on a different subject and not reiterate what is to be said, for it would take some time to go over and over again.

Dr. McBrayer: Before we go further with this, sir, I would just like to ask the Chairman, or the Council, to rule upon one point. So far as I am concerned—I am not very familiar with the laws that govern this Council in its deliberations—there is no reason why we should not proceed in any manner that we may choose, and render any decision or any verdict that we may choose; but, sir, it seems to be a policy in this land of freedom that no man shall be convicted of any crime or misdemeanor until he has first had an opportunity to meet his accusers face to face, and to hear the charge that is preferred against him, and have an opportunity to answer thereto—if any answer he has. That holds true in all our courts of equity, as I am informed. If a suit is instituted against a gentleman, it must first start in the court, and he must be notified that such and such charges are preferred against him, and that he has so many days in which to demur or answer to the charges; and if he is arrested on a high

misdemeanor or felony, he may be placed in jail to await his trial, but they can not try that man in his absence. If he flees the State, they can not convict him of murder until he is brought face to face with his accusers and had a chance to hear the evidence upon the charges and make an answer thereto.

Now, sir, if this Council desires to proceed, I shall not interpose any objection, but I should like to know if we are to proceed in this matter without the gentleman against whom these charges are made being given an invitation to be present and given an opportunity to explain himself.

Dr. Taylor: I rule that the Council sit as a committee, and the action of the Council will be governed by the pleasure of the majority of the Council. We have no precedent or written rules, and we will be governed by the pleasure of those present.

Dr. Knox: *Mr. President:* It occurs to me to ask if Dr. Register, the editor of the *Charlotte Medical Journal,* has been officially notified by the Guilford County Medical Society that this matter was to be brought up. I think it proper that the members of the Guilford County Medical Society should be asked to state whether or not due notification has been given to Dr. Register that this matter would come before the Society, or any part of it.

Dr. Edmund Harrison: *Mr. President:* No notice has been given Dr. Register.

Dr. Harper: I think it would not be right to go ahead and try a man in his absence. I think the editor should be notified, and if he is in the city I think it proper now that the Council notify him of this proceeding, and that he be requested to come before this Council at a subsequent meeting.

Dr. Taylor: The Council is open to hear the Guilford County Medical Society, through any representative or those who care to speak, under the resolutions of Dr. Knox.

Dr. Harper: If you will allow me I will read section 7 of the Constitution: "A man who is guilty of any offense—"

Dr. Knox: That isn't the authorized Constitution of the Medical Society of North Carolina. I hold in my hand a copy of the original.

Dr. Laughinghouse: *Mr. Chairman:* I move that the Secretary of the North Carolina Medical Society be invited to read the original. We do not know which copy is correct.

Seconded by Dr. McBrayer.

Dr. Taylor: It is ruled that the Secretary of the State Society shall read this rule.

Dr. Knox: The point is made in an undertone, and I think we should ask the Secretary of the State Society to state whether the copy that I hand him is the Constitution of the Medical Society of the State of North Carolina.

Dr. Stanton: It is on the first page. (Secretary reads): "Medical Society of the State of North Carolina," etc. "Officers and Committee. 1903 edition."

"Medical Society of the State of North Carolina, officers and committee for 1904."

"At the 49th annual session, 1902; the address of the President, Dr. Robert S. Young, contained the following:"

Dr. Taylor: The Chair rules that that is unnecessary. We will take the Secretary's statement.

Dr. Knox: Our Secretary that was during the year when that Constitution was adopted is our present President, and had been the efficient Secretary for years. I request that the President of the Board of Councilors hand that paper to the President of the North Carolina Medical Society and ask him if he is satisfied that that is the authorized Constitution of the Medical Society of the State of North Carolina, and that this Council take his opinion of it as to its authority, because he was then their Secretary.

Dr. Taylor: The Chair has understood the Council to ask the Secretary to give his testimony, but if it is their pleasure we will ask the President also.

Dr. Knox: I asked that because the present Secretary was not the Secretary when this was adopted. The present President of the North Carolina Medical Society was and had been for years the efficient Secretary of the North Carolina State Medical Society.

Dr. McBrayer: *Mr. Chairman:* May I be heard? I do not like to quibble over small matters, sir. I really beg your pardon for dabbling in this matter, but the point was raised that the Constitution and By-laws as presented there was not the correct copy, and if I remember the proceedings this morning a motion has been made in the general session, and carried without opposition, that a committee be appointed to edit this thing and make it as nearly correct as possible, and I am willing to take your word, I am willing to take the Secretary's word, I am willing to take the President's word, or most any one else's; but the point was made that this copy was not correct, and there is no evidence whatever, except this printing in cold type—there is no evidence whatever that that is the Constitution of the Medical Society of the State of North Carolina at all. It is not signed by the officers, has not the seal of the Society upon it, and there is nothing except some printed matter upon this page and probably some other printed matter referring to the Medical Society of the State of North Carolina. Now, sir, I am going to accept what the President of the Society or anybody else says.

Dr. Taylor: The Chair rules that we will take the evidence of the present President, and will not have further discussion on the Constitution.

Dr. Knox: I do not object to the Secretary of the Society putting the seal of the State Society upon that.

(The paper in question was here shown to the President of the State Society for his opinion as to its legality.)

THE PRESIDENT: *Mr. Chairman:* My impression is that this is a copy of the Constitution adopted at the 1903 session of the State Medical Society.

DR. KNOX: I would ask the President if he is willing to say that that is a correct copy?

THE PRESIDENT: To the best of my knowledge and belief.

DR. KNOX: To prevent absolutely any question about it I ask that the Secretary be requested to put the seal of the North Carolina State Medical Society upon it.

DR. MCBRAYER: I wish to make the point that the Council has no right to instruct the Secretary of the State Medical Society of North Carolina to affix his signature and seal to a document of any kind certifying if it is correct or not.

DR. KNOX: I simply asked him if he was willing to put his seal upon it.

DR. LAUGHINGHOUSE: It strikes me that this is all entirely unnecessary. My motion was that the Secretary of the North Carolina Medical Society read from the official copy of the North Carolina Medical Society the portion desired by the gentleman. I take it for granted that the North Carolina Medical Society is in possession of the official copy, and if that official copy is produced we will get over this dilemma.

DR. TAYLOR: The Chair rules that the Council will proceed under this pamphlet as the Constitution of the State Society, mark it as such, and if there is a difference it will be a subject of appeal.

DR. TAYLOR: The Council will proceed with the business, and is open to a communication from the Guilford County Medical Society.

DR. LAUGHINGHOUSE: *Mr. Chairman:* I move that the Secretary read section 7, as was embodied in the motion which was carried some minutes ago.

Dr. Taylor: The Secretary is instructed to read section 7 without further discussion. By-laws, ch. 1, sec. 7.

(The section referred to read by the Secretary.)

Dr. Taylor: The Chair rules that this section does not refer to the present deliberations.

Dr. John Roy Williams: *Mr. Chairman:* In reference to the editor of the *Charlotte Medical Journal* having been officially notified as required by the By-laws of this Society, I beg leave to submit to you honorable gentlemen that yesterday morning I came into this assembly and I arose to a question of personal privilege—

Dr. Laughinghouse: *Mr. Chairman:* I rise to a point of order. According to the section read just now we have absolutely nothing before us. The only legal way in which we can get anything before us is to have it come to the Secretary of the North Carolina Medical Society in the form of a written communication, that written communication is to be handed to us by the Secretary of the North Carolina Medical Society; hence we have absolutely nothing before the house, and we can not act until we have such communication, coming through the Secretary of the North Carolina Medical Society. Therefore I say that all evidence and all arguments are out of order until we get such a resolution, delivered to us in a proper manner.

Dr. Williams: That is the point I desire to make.

Dr. Taylor: The Chair is pleased to make a decision on this point. It is the opinion of the Chair that the Council holds the position to hear any complaints, and if there is sufficient evidence of any dereliction on the part of any member to put that before the censors.

Dr. Stevens: I would suggest that we turn to the Board of Censors. If those are the rules that govern us we can not do anything. We can not override all our precedents and rules in the Society.

Dr. Williams: I beg leave to show that the charges have been submitted to the Secretary of the North Carolina State Medical Society.

Dr. Stevens: They have not been submitted for a sufficient length of time, and we can not change the Constitution at our will.

Dr. Harper: *Mr. President:* I move, in view of the fact that we have nothing before us that we now adjourn.

Dr. Taylor: The Chair is forced to hold that the Board of Councilors is the Board of Censors, and is here to hear any complaints.

Dr. Knox: *Mr. President:* I desire to make this statement, much as I regret to make it: It is absolutely essential that a Board of Censors or a Board of Councilors shall know what it is doing. It is essential that this Board should know what the law that governs it is. It is a fact that during the time the Secretary of the State Medical Society was reading sec. 7, ch. 1 of the By-laws, several of the Councilors were talking and did not hear it. I ask that the Chair request the Secretary to again read sec. 7 of ch. 1 of the By-laws, and that the Chair keep order in the Board of Councilors while it is being read.

(Dr. Laughinghouse here reads the section referred to from the Transactions for 1907.)

Dr. Knox: I ask that the gentleman read from the recognized Constitution and By-laws.

Dr. Laughinghouse: I want to say that this is a copy (picking up the pamphlet referred to) sworn and certified to by the President and Secretary (laughter) of the Medical Society of the State of North Carolina.

(The section is here read.)

Dr. Laughinghouse: Now, Mr. President, my idea is that we have absolutely nothing before us as a Board of Cen-

sors, and we can not have anything as a Board of Censors until that thing comes to us through the Secretary of the North Carolina State Medical Society, and comes in writing.

Dr. Williams: *Mr. Chairman:* I wish to show that this has come through the Secretary of the North Carolina Medical Society.

Dr. Taylor: The Chair was going to ask of our Secretary if such was the case. Has this come to us through the Secretary of the State Society?

Dr. Williams: I presented it to the North Carolina State Medical Society.

Dr. Knox: I move that Dr. Williams be heard in any statement he wishes to make in regard to the legal and formal presentation which he made to the Secretary of the North Carolina State Medical Society.

Dr. Williams: *Mr. President and Members of the Council:* I arose yesterday morning to a question of personal privilege. According to the Constitution and By-laws this Society is governed by rules which I hold in my hand—

Dr. McBrayer: I rise to a point of order.

Dr. Taylor: The Chair will hear Dr. McBrayer.

Dr. McBrayer: I have no objection to hearing any one, nor of hearing Dr. Williams; but I do insist, sir, that any one coming before this Society shall speak in proper order and to the point.

I wish to make the point, sir, that we have nothing whatever to do with any fuss or any contention. I beg pardon for the word "fuss." With any contention between the Guilford County Medical Society or between its officers and the officers of the Medical Society of the State of North Carolina.

I make the point, sir, that we have not received any charge through the Secretary of the Medical Society of the State of North Carolina, as is provided and required in the Consti-

tution and By-laws of the Society, and therefore we can not consider anything. I make that point, and then I will make a motion as soon as you rule on it.

Dr. Taylor: The Chair rules that we have had no communication in its regular channel and we shall hear the statement of Dr. Williams on that point, as to whether it has been started to the Council through the Secretary of the Society.

Dr. Williams: Roberts' Rules read: "Questions relating to the rights and privileges—

Dr. Laughinghouse: I rise to a point of order.

(Cries of "Down! down!" from the members of the Society.)

Dr. Knox: I ask that the Chair request the members of the Society, outside of the Board of Councilors, to speak with respect to the Council. The Chair will not be governed by any one outside of the Council. It desires to treat everybody standing within its hearing with proper respect, and it respectfully asks for similar consideration and we should not be interrupted with calls of "Sit down! Sit down!" We will *not* "sit down" until we do our full duty. (Applause.)

Dr. Laughinghouse: *Mr. Chairman:* I wish to say the object of my contention is a conscientious object. I take it for granted that the members of the Medical Society of the State of North Carolina desire to have a thing done properly, honestly, squarely and disinterestedly. I furthermore believe that the backbone and common sense and conscientious intelligence of the Society will come down in disapprobation upon any committee, any individual, any Board of Censors who in a lax and unconstitutional manner performs their duty. I believe, sincerely and honestly, that we are making a mistake to receive any oral communications before this Board until there is a charge brought before something or somebody in a constitutional and a legal manner. I contend, therefore, that Dr. Williams nor doctor anybody else has any

right to appear before this Board orally until such a communication is brought to us in a proper manner. As it is we have absolutely nothing to act upon. We are absolutely without business. We are sitting here waiting and asking that the purpose of this Convention be brought before this Board of Councilors in a legal and a proper manner, and I do not think that Dr. Williams nor any one else has the right to come and suggest to us anything out of Roberts' Rules of Order, the ten commandments, or anything else. It is a question of plain, common-sense business that I am contending for; and I want it furthermore understood that there is no personal feeling in this matter, so far as I am concerned. I feel as kindly toward the Guilford County Medical Society as I possibly can, and I have no reason to feel otherwise. I have no unkind feeling towards any man, either prosecutor or prosecuted; I have no feeling in this thing, except one point: I am deeply interested in the North Carolina Medical Society. My duty is going to be done to that regardless of any member or any set of men.

Dr. Taylor: I will hear the Council on Dr. Laughinghouse's point of order.

Dr. Knox: *Mr. President:* I made the point just now, and I rise for that reason, that Dr. Williams, having stated that he had made the communication to our Secretary, had the right to state that he had made it in the proper way. I realize from what Dr. Laughinghouse has said that that was not the proper view. This Board has no right to take any step until the proper step has been taken, through regular procedure, and the Secretary has transmitted to us any statement or grievance that has come to him or to anybody else. The Secretary has not made such a statement, and the gentlement of the Guilford County Medical Society, in spite of my views just now, have no right to make any complaint until this Council has a communication from the Secretary of the Medical Society of the State of North Carolina, and this

Board has no such communication. We must proceed in an orderly way. I move that the whole thing be referred back to the Guilford County Medical Society that the thing be put in proper form.

Dr. Laughinghouse: In speaking on that motion I would say that the Guilford County Medical Society, as long as they have those communications written, present them here and now to the Secretary of the State Medical Society, and the Society present them to the Board of Censors. It can be done now, and settled now.

Dr. Taylor: The question is on the motion of Dr. Knox, that the matter be referred back to the Guilford County Medical Society, and that no action be taken by the Council until we have a communication from them in proper form.

Dr. Knox: Before the vote is put I desire to emphasize the suggestion made by my friend, Dr. Laughinghouse, that we suggest to the Guilford County Medical Society that they immediately make their presentation to the Secretary of the North Carolina Medical Society, and that he in turn turn it over to us.

Dr. McBrayer: I don't want to tell the Guilford County Medical Society what they ought or ought not to do. Let's not tell them what to do. They are a nice set of clever, able, gentlemen. (Applause.)

Dr. Laughinghouse: It was simply a suggestion. They have their charges completed and it is an easy matter to turn their charges over to the Secretary.

Dr. Taylor: The question is on the motion of Dr. Knox, that the matter be referred back to the Guilford County Medical Society. (Motion carried.)

Dr. Taylor: The "Ayes" have it. The matter is referred back to the Secretary of the Guilford County Medical Society.

Dr. McBrayer: *Mr. President:* I move that we adjourn, subject to the call of the Chairman. (Motion carried.)

President of the Society, Dr. Way: The session of the Medical Society of the State of North Carolina will now be in order.

Dr. Bahnson: If I may be permitted to ask a question I should like to be answered before these gentlemen leave the hall.

As I understand this procedure the Guilford County Medical Society, for whom I have not only respect but honor, the Guilford County Medical Society has been deliberately refused a hearing of a communication in the open meetings of the Society several times. Perhaps it was inopportune. Certainly they have been treated, in my opinion, discourteously.

My motion this morning was after the Chair ruled that they could not be heard except before the Board of Censors, my motion was that the Board of Councilors sit now, not to decide the question of guilt or innocence, but to show the courtesy to the Guilford County Medical Society that it has been denied, again and again, a hearing before this Society. I only wish to know if that is the proper understanding of the case?

Dr. Taylor: *Mr. President:* The Board of Censors met in accordance with instructions of the Society, and on constitutional grounds they referred the whole matter back to the Guilford County Medical Society for its constitutional course. The Board of Councilors has adjourned, and report back to the Society that this communication has been referred to the Guilford County Medical Society. The Board is adjourned, at the call of the Chair, and will reconvene at fifteen minutes before twelve to hear any communication coming in the regular way.

Dr. Laughinghouse: *Mr. President:* In reply to my good friend Dr. Bahnson, for whom I have an affection and a

respect and a veneration which comes to me by inheritance, I have to say this: Looking from this proposition from up a tree I think there are two sides to the question. Because a resolution or because a request is refused in open Society does not necessarily mean that that request or that resolution, or the individual, or set of individuals who presented the same, have been treated discourteously.

The laws of North Carolina prescribe that the Board of Medical Examiners shall be elected on Wednesday, and that the election shall begin at 10 o'clock. This resolution was brought in after the Board of Medical Examiners' election was gone into. The President of this Society, I imagine, with his usual forethought and his caution, and the interest of the Society as a whole at heart, realized that when this resolution was brought in it would take up time *ad infinitum*, and that the Board of Medical Examiners would not be elected according to law if this matter should take precedence of the matter then being executed; hence he very wisely refused the hearing of that resolution.

That resolution was brought up again before the conjoint session of the Board of Health, and Dr. Thomas, who was President of the Board of Health, and had no more to do with executing the office of President of the North Carolina Medical Society than I had, could not grant that request.

So, after all, to a man who has gone into the pros and cons of the proposition, it looks like the Society has not treated nor has the President treated any member discourteously.

The President: *Gentlemen:* The Chair rules that having recessed for an open session of the Council, which open session having been held and the general meeting now having resumed, there is nothing now before the general meeting, and I call now for the regular program, which is the paper of Dr. A. B. Croom, of Maxton, on "Obstetrical Work from the Standpoint of the General Practitioner."

"The Relation of the Laboratory to the General Practitioner," Dr. Watson S. Rankin, Wake Forest.

Dr. Fletcher: *Mr. Chairman:* As a general practitioner for many years I desire to say, sir, that this is the most practical and sensible paper that I have ever heard on this subject.

Dr. Taylor: *Mr. President:* According to the request of the Councilors I was to call the session together again in fifteen minutes after adjournment, and the Council being ready for business I will ask their assembly.

If it is not convenient to the house to give us the room we will meet anywhere that the Council suggests.

The President: You have heard the request of the Chairman of the Council. Is it your pleasure to grant it? The Chair is ready to entertain a motion either way. Do I hear a motion that the Council be granted the privileges of the floor for a few minutes?

Dr. McBrayer: *Mr. President:* As I understood, sir, on a previous motion we were to assemble here in the presence of this Society, and as this is a continuation of the meeting, I take it, it seems to me it is unnecessary for a motion to be entertained. I should be pleased to have all of the gentlemen present who are in the hall.

The President: *Gentlemen:* Without objection, then, the Council will assemble for a few minutes' session in the hall, and, declaring a recess of the Society, I tender the gavel to the President of the Council, Dr. Taylor.

Dr. Julian: I desire to announce that the State Society for the Prevention of Tuberculosis will meet in the lobby of the Zinzendorf at half-past 12 o'clock.

Dr. Taylor: The Council will please come to order. According to request the Council is again called to consider a communication from the Guilford County Medical Society, which, through the Secretary of the State Society, has come before us. The matter awaits your pleasure.

Dr. Knox: Do I understand, Mr. President—I wish to know if I am correct—that the Secretary of the State Medical Society of the State of North Carolina has presented this communication from the Society to this Council?

Dr. Taylor: That is what I desire to state.

Dr. Knox: I desire to ask that this Council hear from the Guilford County Medical Society bearing upon this question.

Dr. Laughinghouse: *Mr. Chairman:* I will second that motion, so as to put it before the house, and then discuss it.

Dr. Knox: My motion is—if it was not put—I make another motion: I move that the Board of Councilors of the Medical Society of the State of North Carolina will be glad to hear from any member of the Guilford County Medical Society in reference to the communication which has now come, in an orderly way, to this Board through the Secretary of the State Medical Society.

Motion seconded by Dr. Smith.

Dr. Laughinghouse: In my opinion that motion is entirely out of order. We are not in a position to receive testimony, either pro or con, until the accused has been enlightened as to his charge, given the specified time allowed by the Constitution and By-laws of the Medical Society of the State of North Carolina, and then the Guilford County Medical Society can come to us with all the evidence it sees fit to give, but that evidence to-day is absolutely out of order. It isn't in accordance with the rules prescribed by our Society; hence I am opposed to that motion.

Dr. Knox: I desire a moment to read this communication to see if I am right in my impression. The charges have to be made in writing, and that is what is done here now, and if you will allow me I will take one minute to read the communication.

(Here reads the communication referred to, which was presented at the first meeting of the Council.)

I understand the point of order to be made by Dr. Laughinghouse that the Guilford County Medical Society has not yet presented in order any definite charges. Dr. Laughinghouse makes the point of order that they are not charges in writing, in accordance with the law, from the Guilford County Medical Society. We want to give these gentlemen an opportunity to state fairly what they want to state, and if it is considered that that letter is not in the nature of charges, and these gentlemen under a misapprehension have conceived that letter to be charges, they have due notice now that they have not presented, in accordance with the Constitution, written charges against anybody. I don't think the point well taken. I think that letter constitutes charges. But we must comply with the letter and spirit of the law. That we are going to do regardless of any other person's opinion; but, in my view, that letter constitutes charges. I think it does, but one of the members of the Board of Councilors makes the point that there are no charges before this body in conformity with the Constitution. I think the gentlemen from the Guilford County Medical Society have the right to understand that they are misunderstood by any members of the Council, and that if they desire to make any corrections they should be given a chance to do so.

Dr. Laughinghouse: Dr. Knox misconstrues my point of order. To make it plain, as I understand it, the Guilford County Medical Society has presented to the Secretary of the State Medical Society charges properly made in writing. These charges have been brought to the Secretary of the Board of Censors. The Secretary of the Board of Censors has brought this to the attention of the Board. As I understand it, this Board realizes that the Guilford County Medical Society has acted in conformity with the law of the Constitution. I understand it as such.

The point I am trying to make is that we have received this charge. In accordance with the By-laws the Board of Censors now tenders a copy of this charge to the accused. The accused then has a certain number of days—I think ten—in which to prepare rebuttal evidence to disprove the charges brought against him. The Board of Censors at this sitting, according to the Constitution, can not be open to any evidence, pro or con. As I take it, this Board of Censors, after an allotted time, after the accused has been given a copy of the charges brought against him, this Board of Censors has got to meet somewhere in the State of North Carolina within the prescribed time and settle this matter. We can not settle it to-day other than the charges are absolutely unconstitutional.

Dr. Knox: I understood the gentleman to say that he didn't understand the charges had been specifically presented in writing.

Dr. Laughinghouse: I consider the charges specifically presented in writing, excepting one point. That is, that the *Charlotte Medical Journal* appears to be on trial, and the *Charlotte Medical Journal* has not paid its dues to the Society, and therefore is not a member of the Society.

Dr. Knox: I desire to correct the gentleman. Dr. E. C. Register is the gentleman and has paid his dues.

Dr. Laughinghouse: Dr. Register's name does not appear on it, and I would suggest that the Guilford County Medical Society put his name in the charges.

Dr. Knox: Dr. E. C. Register is the editor.

Dr. Laughinghouse: We are not supposed to know who the editor is. He may be the angel Gabriel. We are not supposed to know the editor of any journal. Dr. Register's name ought to be put in there, and I move that this be returned and this little change made. The only thing I want is constitutionality.

Dr. Williams: I beg to say that the Guilford County Medical Society has no desire to put Dr. Register's name in there, and that it begs to call to the attention of the gentlemen of this Society who do not know who the editor of the *Charlotte Medical Journal* is, who he is.

Dr. Sikes: I believe I see a point to enable us to facilitate matters. This County Society, as I understand, do not want to present charges if they can be avoided. They have asked this Board of Councilors to hear them and then, if it is their decision that they are justified in these charges, then they propose to present charges and have them come in the right way. They are asking your opinion as to the advisability as to whether they shall present those charges or not.

Dr. Knox: It seems to me if that is the course that the Guilford County Medical Society wishes to pursue that they should ask the advice of private individuals. The Board of Councilors can not give advice on matters to come before them in the future. If they do they put themselves in the way of working unfairly toward matters to come before them in the future. If you go to a member of the Board of Censors when they are not in session or, preferably, some judicially-minded member of the State Society, and ask his personal advice and opinion, then you are on the right track; but for a member of the Board of Censors to advise a member of the North Carolina State Medical Society whether they shall or shall not bring forward certain charges, it seems to me to be putting the Council in an awkward position.

Dr. John Roy Williams: The Board of Guilford County Commissioners desire to state that the charges are in the attached cards. They speak for themselves.

Dr. Weaver: *Mr. Chairman:* May I speak two words? You gentlemen are sitting here as a grand jury. If there is any evidence against the gentleman I would suggest that you bring in the verdict; otherwise that you set the trial to be had at a future time.

Dr. Beall: The trouble, Mr. President, with this matter, as it seems to us, is that you are endeavoring to prejudge the case before the evidence is before you. Now there are a number of points bearing exactly upon the various questions that you are arguing that we think we could satisfactorily explain if we had the opportunity to bring the matter before your Board. We thought, under the resolution with which you are constituted, that you were to sit and hear this case regardless of any judgment you were to render or whether you should decide to render any judgment or not, and the Society of Guilford County has been criticised for various omissions: First, that we did not give Dr. Register due notice before this matter was brought before this Society. Technically that is correct. The *Charlotte Medical Journal* reached Greensboro on the 12th of June. In that issue we found a card advertising a fake institution, recognized not only in Guilford County as a fake institution, but one that is known all over the State as the attention of the public has been called to it as one of the grossest impositions that exists in North Carolina. If we had given Dr. Register official notice he could and would have come before this Society and claimed that he did not have the regulation ten days notice, which was in the nature of the case impossible to give him. That being the case, and the matter going off from before this Society, that card could continue to run in the *Charlotte Medical Journal* for twelve months, without any protest from any members of the North Carolina Medical Society, and we hold that the publication of that card is an endorsement of the Medical Society of North Carolina. It is the only medical journal published in the State. It is presumed to advertise legitimate institutions, and there is nothing on the card to indicate that anything about it is unethical.

We felt, as the parties most aggrieved by that publication, that it was due the Medical Society of North Carolina to

have their attention called to a thing that we consider a breach of courtesy and an insult.

Now, it has been alleged that Dr. Register allowed this card to enter his columns ignorantly; that he knew nothing about the man or the character of the institution advertised.

A few years ago the Board of Examiners of North Carolina prosecuted through the courts this Dr. Biggs for practicing medicine without a license. He was convicted in the Guilford County Superior Court, and upon appeal to the Supreme Court the verdict was reversed upon the ground that Dr. Biggs, who advertised himself as a drug healer, was not a physician within the meaning of the act, and he turned back to Greensboro and set up this institution, with larger funds, and has been advertising through the lay press continuously; but this is the first time in the history of medical literature so far as I know, certainly in North Carolina, that an outrageous quack institution has been allowed to publish a card in a medical journal of North Carolina or in the United States, so far as I know or am informed.

Now, as to the character of the man and of the institution, the facts are patent to any one who seeks information, and I hold and the Guilford County Medical Society holds (for which I am speaking) that the only medical journal in North Carolina has no right to advertise to the public an institution that is opposing every physician in the State, that belittles the medical profession, that says to his neighbors when they come to him, "Your disease is due to the fact that you have been drugged to death. All that you need is to come into my institution and take my treatment, get this medicine that the doctors have been pouring into your stomach out of your system, and you will be well."

The effort of the Guilford County Medical Society since the Society of North Carolina met has been to bring these facts, which you are now gracefully permitting me and this Society to present to you, before you as a body, and we feel that if we, the largest County Society in North Carolina,

and in that respect an important component part of this Society, is debarred from stating our position before this Society that we have had inflicted upon us a grievous wrong, and not being content to lie still under that wrong we would feel necessarily obliged to resort to some other measure to bring before the public and before the profession the facts that we had in our possession; but we propose and have proposed all along to act decently and in order, and we wanted to bring this matter before the Society for their information and action.

Now, so far as we are personally concerned we do not care particularly about Dr. Biggs' sanitarium. He has been with us about ten years and he says that he has about reaped that field and that this year he is going to move his sanitarium to Asheville (laughter and applause), and when he gets that far west we will be content and will leave it to them to wrestle with.

Dr. Laughinghouse: The point I am trying to bring before you is, according to the rules of the Society, that we have received these charges. The next step of the Board of Censors is to immediately furnish a copy to the accused and to the Chairman of the Board of Censors. The Board of Censors shall investigate the charges on their merits, but no action shall be taken before giving the accused and accusers an opportunity to be heard; and on those grounds I feel that the proper thing for the Board of Censors to do is to instruct its secretary to send a copy of this charge to the *Medical Journal,* then the Board of Censors should decide upon some day to meet and hear the evidence, pro and con, concerning this proposition. It is the only legal way we can attend to it. Therefore I move that the Secretary be instructed to send a copy to the *Charlotte Medical Journal* of the charges brought against it to-day. Motion seconded.

Dr. Edmund Harrison: I would just like to say that now that we have an elective council what body would it go before?

Dr. Taylor: The Council sitting now is not informed upon the ruling, but my opinion is that it is before the regular Board of the Censors.

The question, gentlemen, is the motion of Dr. Laughinghouse that a copy of this resolution be sent to the *Charlotte Medical Journal,* as prescribed by the law and the Constitution.

Dr. Laughinghouse: It is moved that a copy of the charges brought against the *Charlotte Medical Journal* by the Guilford County Medical Society be sent the said *Journal.* Motion carried.

Dr. Laughinghouse: *Mr. Chairman:* It seems that we have performed our duty up to date at any rate, and I want to take this opportunity of saying that I sincerely hope that this misfortune, for it is a misfortune, will not affect the North Carolina Medical Society in any way.

The Guilford County Medical Society has a perfect right and ought to bring such things to the notice of the Society. In the Guilford County Medical Society there are men who will do as much for the North Carolina Medical Society as any number of men in the whole State. They are thoroughly conscientious and believe they are doing what they ought to do.

I trust that any suspicion of foul play on the part of the Society or the Censors or the Guilford County Medical Society will be cast from the mind of every man. Each and every one of us were doing our duty as we saw it. If we differed that was because of our individuality. I trust that this thing will slip out from the memory of each and every one of us without leaving any corns or other painful spots. For my part I feel that we, as members of this Society, should take the seeds that have been given to us and grow them into flowers. We should put those flowers in an environment that will prove to be a soil so fertile that the flowers will be brought to those who come after us in the form of good, ripe

fruit. So far as I am concerned I want to be looked upon as a grain of sand that makes up the mortar to stop up the cracks of the whole of the North Carolina Medical Society. I want to be known as one of the bricks that go to fill up the pillars that hold up, strong and well, this Society that has done so much for us and for the whole United States.

Dr. Bahnson: *Mr. President:* On behalf of the Society I want to thank Dr. Laughinghouse for his very timely and very hearty remarks. I accept them. I accept the honest and genuine work of the Board of Censors, however constituted, as an honest expression of opinion, and I wish now to make a motion:

That the Medical Society of the State of North Carolina, in regular meeting assembled, unanimously repudiate the *Charlotte Medical Journal,* its nameless editor and all his works as being totally unfit for the use of any self-respecting physician of the State.

Dr. .....: *Mr. President:* I desire to make the motion that we adjourn to meet after dinner in a private room.

Dr. Taylor: The question is on the motion that this body shall adjourn, subject to the call of the Chair. Those favoring it say "Aye." Those opposed, "No." The Council is adjourned.

President of the Society, Dr. Way: *Gentlemen:* The general meeting of the Medical Society is now resumed.

Dr. Bahnson: I beg the Society's pardon and the Board of Censors' pardon for bringing my motion in at an inopportune moment, and I brought my motion with the hope of reconciling conflicting ideas. In view of the fact of the unethical, unprofessional act of the conduct on the part of the *Charlotte Medical Journal,* I desire to make the motion that the Society of the State of North Carolina do repudiate the *Charlotte Medical Journal,* its nameless editor and all his

works, as being totally unfit for the patronage of any self-respecting physician of the State.

Dr. John T. Burrus: I second that motion.

Dr. Laughinghouse: *Mr. President:* In the name of harmony, in the name of justice and in the name of square dealing I move that the motion be not carried. We do not know whether the *Charlotte Medical Journal* has been guilty of a misdemeanor with intent or not. This Society has not as yet had brought before it any evidence from the *Charlotte Medical Journal* that it has acted incorrectly, with knowledge, with forethought and with intent. It may be that the *Charlotte Medical Journal* inadvertently made this mistake. The *Charlotte Medical Journal* is a journal that has the largest circulation in the South. It goes to Georgia, South Carolina, Texas, Mississippi; in fact, all over the South. The duties incumbent upon the editors of the *Medical Journal* are nothing like as small as one might think. How do we know but what the *Charlotte Medical Journal* has some layman who looks after the advertising department, and this layman, absolutely ignorant of committing any crime, secured the advertisement of this sanitarium without the knowledge of the editors. If this is the case are we doing justice to the *Charlotte Medical Journal* to repudiate it? I ask that question and sit down.

Dr. Weaver: As I understand it, sir, I do not think that the *Charlotte Medical Journal* is the official organ of this Society. Therefore, officially, I do not see how we can condemn it as a body, but individually we can repudiate as each individual may see fit. Therefore I move that we lay this motion on the table.

Dr. J. A. Turner: *Mr. President:* I want to ask the question if it is not an insult that the editor of the *Charlotte Medical Journal* is so derelict as to turn over the advertising to a layman? Have we a right to assume that the editor of the *Charlotte Medical Journal* does not know that the Keeley Institute of Greensboro is not an ethical institution? That

it does not come within his right and duty to secure a manager who will not advertise such things to a people who are not supposed to know what is right or wrong along these lines? I refer to the people who will patronize those institutions.

Dr. J. M. Taylor: *Mr. President:* Whatever we may think about the action of the editor of the *Charlotte Medical Journal* in admitting this advertisement to its paper, we do and should know that it is the property of a stock company, and while we do repudiate this sort of thing we are about to injure the property of an ethical company of physicians, and it would be well to pause before we do it. I know that there are in the *Charlotte Medical Journal* a number of physicians, part owners of it, in the recent consolidation with the *Carolina Medical Journal* and the *Charlotte Medical Journal,* who are ethical and wish to be in order.

Dr. Knox: Whatever we may think of it, under other circumstances, the editor of the *Charlotte Medical Journal* is under charges referred to the Board of Censors. The Board has adjourned in order to allow the orderly course of procedure. He is entitled—whatever he may have done—to the orderly course of procedure, of a deliberate and judicial course of procedure in order to defend himself. He is not here. I think it would be highly improper, whatever may be done after the investigation of the Board of Censors, to adopt any such resolutions at this meeting. We must be fair and square and true, and I know of no fairer man than Dr. Bahnson. He means to do the right and just thing. In my mind that is not the just thing. No matter if we know a man to be a criminal he must be given an opportunity to clear himself.

Dr. Laughinghouse: *Mr. Chairman:* In reply to Dr. Turner, I simply give him a trite illustration. If I were going to burn up a man's house I would do it after he was condemned.

DR. WEAVER: I understood that this motion had been tabled.

THE PRESIDENT: It has been moved and seconded that this motion of Dr. Bahnson be laid on the table.

DR. BAHNSON: *Mr. President:* That is unconstitutional. My motion can be amended but not thrust aside for some other motion. I wish to be heard before that amendment is made. My motion is made and seconded and is regularly before the house. No other motion can come before the house until that is disposed of.

THE PRESIDENT: I will be very glad to have Dr. Bahnson state his motion.

DR. BAHNSON: Again?

THE PRESIDENT: Yes, sir.

DR. BAHNSON: I move that the Medical Society of the State of North Carolina, in regular session assembled, unanimously repudiate the *Charlotte Medical Journal*—if the gentleman is anxious about this—shall I repeat it?

THE PRESIDENT: If you please, yes.

DR. BAHNSON: —its nameless editor and all his works, as being utterly unworthy the patronage of any self-respecting physician in the State. And that was seconded, Mr. Chairman, and I would like to say why I desire to have that motion passed. I desire to reiterate, if any man needs more evidence of guilt, it seems to me that he would have to have an angel to enlighten his mind. The evidence is patent. So far as the responsibility is concerned, which the gentleman has touchingly spoken of, the responsibility for the advertisement, I never have heard of a bank director being excused from his penalty because the cashier ran away with the bank's funds; neither have I heard of a man who was excused because of his ignorance of the law or of a circumstance. So far as the nameless editor of the *Charlotte Medical Journal*

is concerned he has had ample opportunity, in his varied and long life, to know what the ethics of the Association are. So far as the gentlemen in the stock company are concerned my sympathies go out to them. That is an additional injury. Why this injury, damnable insult, crime against the medical profession in North Carolina has been spread all over our land. The *Charlotte Medical Journal* has the biggest circulation in the State, and this abscess that he fosters is spread all over our land, even upon our borders, and we are to sit back while the nameless editor pleads the "baby act!"

THE PRESIDENT: *Dr. Bahnson:* This resolution of yours is a matter of great consequence, and I want to ask you that it be reduced to writing before it is put to this body. Will you kindly do so?

DR. BAHNSON: Yes, sir; at once.

DR. LONG: *Mr. President:* I have a motion.

The President raps for order.

DR. LONG: *Mr. President:*

THE PRESIDENT: The Society will be in order.

DR. LONG: *Mr. President, Gentlemen:* In the name of the Medical Society I insist that I be heard.

THE PRESIDENT: The Chair has called for the resolution of Dr. Bahnson, which he is reducing to writing. Pending the answer to that call Dr. Bahnson has the floor, and the Chair rules Dr. Long out of order.

DR. BAHNSON: I yield to Dr. Long, temporarily.

THE PRESIDENT: *Dr. Long:*

DR. LONG: I recognize the fact that the matter embodied in Dr. Bahnson's motion is a very important thing, not only for the Guilford County Medical Society but for the North Carolina Medical Society, and I most earnestly desire that

what goes on record here shall not only be the right thing but shall be just to all parties concerned; and with that spirit and with that intent I desire to move a substitute for Dr. Bahnson's motion, if I understand from the Chair that this motion is before the house.

Dr. Knox: *Mr. President:* I can enlighten the gentleman. It is my conviction that Dr. Bahnson will modify his original motion and put it before the house. If the gentleman will wait but a minute he will be able to make his suggestion.

Dr. Bahnson: *Mr. President:* With the permission of the gentleman who seconded me and the permission of the gentlemen who so well supported me, I desire, because of the fact that I was urged on by the earnestness of purpose, to modify, to a certain extent, the motion that I made, and with your permission I will read that instead of the other:

Resolved, That the Medical Society of the State of North Carolina, in regular session assembled, unanimously agrees that if the Charlotte Medical Journal does not at once withdraw all unethical advertisements, and does not tender an ample apology, that the support of the Society and its members be withdrawn.

Dr. Burrus: As being the member of this Society who seconded the first motion I wish to arise to second this motion of Dr. Bahnson's, and to urge its passage.

The President: The resolutions are before you. What is the pleasure of the Society? Is there any discussion desired upon this resolution?

The question is upon the adoption of the resolution as read. Those favoring the adoption of the resolution will signify it by saying "Aye." Those opposed, "No."

Dr. Knox: No. And I wish to explain that. I believe if an investigation had been made by the Board of Censors that that motion would be in order. It would have been wiser to have withheld any such action until after the judgment of the Board of Censors.

Dr. Jewett: *Mr. President:* As I understand it the charges are not against any individual but against a medical journal, which is not a member, and the only way the Society could reach it would be by discontinuing its patronage unless it complies with the Society's wishes. I do not think it is a charge against Dr. Register individually.

The President: The resolutions are adopted.

The Society will be in order. The consideration of the regular program will be resumed by the reading of paper No. 33.

Dr. W. S. Rankin: I move, in view of the fact that so many have gone to dinner, that we adjourn to dinner and have Dr. Hodges's paper immediately after dinner. Motion carried.

Convention here took a recess until 3 p. m.

Foot-note by Editor.—The attention of the Editor of the *Charlotte Medical Journal*, Dr. E. C. Register, who was absent from the Winston-Salem meeting when the above proceedings were had, having been called to the Society's action the July, 1908 issue of the *Charlotte Medical Journal* contained the following statement:

A STATEMENT.

On the 15th of May, Mr. J. J. Wootton, advertising and subscription manager of the *Charlotte Medical Journal*, sent to this office an advertisement of the Biggs Sanitarium, Greensboro, N. C.

The advertisement was not read by the editor or by any one connected with this *Journal* who might have recognized its unethical character, and since those through whose hands it passed knew nothing of Mr. Biggs's history, the advertisement found its way into our columns without those who passed it having any idea that it was irregular. Of course Mr. Wootton, a layman, would not know much about medical ethics, consequently he accepted Mr. Biggs's advertisement without any investigation.

A few hours before leaving Charlotte for the Winston meeting of the North Carolina Medical Society, I received two letters from two Greensboro physicians, calling my attention to Mr. Biggs's objectionable advertisement. Then I read the advertisement for the *first time*, and fully realized that a mistake had been made, and that the advertisement should not only never have appeared, but should be eliminated as soon as practicable.

On my arrival at Winston I made the above explanation to Drs. Dodson, Turner and Williams, all of Greensboro. Later I learned that they with several other Greensboro physicians, proposed to bring the

THURSDAY AFTERNOON.

Society reconvened at 3:20 p. m.

"The Results of Surgery as Seen by the General Practitioner," etc. Read by Dr. J. Allison Hodges, Richmond, Virginia.

DISCUSSION.

DR. J. F. HIGHSMITH: I have enjoyed Dr. Hodges's paper very much, and it has opened up a field that is very extensive. We have good authorities on all sides on this subject. I will address my remarks in just a few words.

We should always be extremely careful to diagnose these cases. That is the keynote to the whole situation. We all know the importance of correct diagnosis in any disease. In the first place, a physician has to have experience to know how to diagnose these cases of ovarian disease. Many cases that come to the surgeon have been sick for years. They may have contracted some specific trouble five years, perhaps, before, and it has run on, like a thorn in the flesh, existing from time to time, and you can not conceive the suffering which they have undergone, and when you really learn the trouble you are astonished how they have undergone these conditions and lived.

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matter before the Society. On the last day of the Convention, when a majority of those in attendance upon the session were absent, and after I had left for Charlotte, the matter was brought before the general meeting, and condemnatory resolutions passed without my explanation being mentioned or heard.

The *Charlotte Medical Journal* has always stood for high ideals in medicine; its policies have always tended to build up the medical profession of the South, and especially of North Carolina. It has made many mistakes; it has fallen short in many instances, but its intent to do good has certainly always been apparent.

Whenever any physician, anywhere in this Southland, wishes to criticise the methods of the *Journal*, if he will do so in a friendly, brotherly-like manner, he will be listened to, and what he has to say and whatever suggestion he has to make will be given a most careful consideration.

To the members of the Medical Society of the State of North Carolina.

EDWARD C. REGISTER, *Editor*.

One can not tell the general anatomical conditions that exist without an exploratory incision. It all depends upon your experience and in knowing when to quit, and how far to go.

It has been my experience that diseased ovaries should be removed, but the question is, are they diseased, or are they not diseased? I have opened the abdominal cavity many times and found an ovary, and could not tell whether it was diseased or not. I have been on the fence, and did not know what to do, whether to be conservative or radical. But the ovaries that were diseased I removed and referred to a first-class pathologist.

As I grow older I do not make a mistake often, which differs from the pathologist. His reports are generally returned to me as a chronic osphoritis, ovarian tissue all gone, etc.

Where you have diseased conditions I believe the radical operation is the best, and the more experience I have the more I am of this opinion, the less I see in plastic surgery of the ovary.

W. J. Mayo has no halfway ground. If an ovary is at all diseased he removes it or lets it alone. He don't tamper with it. As to all acute conditions of the ovary, I believe they should be let alone and conservatively treated from time to time until the case is cleared up or developed surgically.

I call to mind a case that I had recently. A patient was brought to me, her doctor thinking she had appendicitis. She had a pain low down in the right iliac region, extending up around McBurney's point, with a great deal of rigidity. I studied the case a few days and wrote the doctor, advising an exploratory incision. At the operation we found everything was adhesions. We found adhesions on all sides of the uterus, ovaries and tubes bound down, also many bowel adhesions. I felt that I had gone up against an acute septic condition. I thought to try to remove these ovaries and free

adhesions at that time I would lose my patient. Sometimes it takes more courage to stop than it does to keep on. I closed my incision. In a short time the patient was able to leave the hospital and was advised by friends to consult some other surgeon in regard to removing her diseased organs, which she did three months after I saw her. This surgeon removed the ovaries completely and the patient got absolutely well.

At the time she came into my hands if I had removed these organs I have no doubt the patient would have died, but after the acute stage was passed the operation gave relief.

We can not under-estimate the great value of studying the different organs before we go into the case, especially the kidneys, the heart and lungs, and the general tone of the system at large.

I have operated on cases where I would remove one ovary and leave one, and it would only be a matter of time until the patient would come back to me suffering, almost wild. I removed the other ovary, doing a complete hysterectomy, and the patient would get absolutely well. The truth was these organs were diseased when she was first operated upon, but it was hard to tell the extent of the disease. We gave the patient the benefit of the doubt.

We can not underrate Dr. Hodges's suggestion, when these patients have been suffering so long, not to send them home in two weeks from the hospital. I do not let them go home under three or four weeks. Then I write to their physician and ask that he keep his eye upon them for some time. This, many times, is worth as much as the operation. To operate without it would be a failure. To operate with it is a success.

As to vaginal douches, I think that they have their place, and many times I think they are used when they have no place. Local applications, glycerine, tampons, etc., we have to use sometimes, when we can not do better.

Dr. Haines: *Mr. President and Gentlemen:* I just want to say a word in commendation of Dr. Hodges's paper and of Dr. Highsmith's discussion.

I think we ought to consider before we operate on these cases. I believe Dr. Hodges has struck the keynote on the subject.

I think in many of these cases by proper physiological treatment we can relieve them of this trouble, and I wish this Society to give a vote of thanks to Dr. Hodges for his valuable paper on this subject.

Dr. Knox: *Mr. President:* I desire to second that motion. It is a very thoughtful paper, and I think a very valuable one and worthy of the close consideration of every surgeon present. My opinion is that a large number of surgeons do rush them in and rush them out in too big a hurry to get beds for other patients.

Dr. Hodges's paper has been a very suggestive and helpful one to me, and will be a source of thoughtfulness and helpfulness to others, I am sure.

Dr. Joseph Graham, of Durham, N. C.: I listened to Dr. Hodges's paper with much interest; it is a very able paper and touched a very important subject.

Surgery has undergone many changes. First we had heroic surgery, next anatomical surgery, then antiseptic surgery. We are now beginning the great age of physiological surgery.

I think the most important thing in connection with the class of cases Dr. Hodges speaks of is a full and accurate diagnosis, a thorough study of the patient; not only a study of the actual disease, but a study of the mental and nervous condition.

Frequently these cases are referred to a surgeon for operation and little attention is paid the nervous temperament. This is a great mistake.

I do not know anything that has appealed to me more

strongly than the words of Dr. William Strudwick, of Hillsboro. He said that it was just as important to know what kind of a patient the disease had as to know what kind of a disease the patient had. This has been worth a great deal to me in my work.

The question of what to do and what not to do in operating on these cases must be decided by the experience of the individual operator. I think the remarks of Dr. Highsmith covered that ground.

The important thing is the relationship of the family physician and the surgeon. To accomplish the best results the family physician and the surgeon must work in company, shoulder to shoulder.

Dr. Haines: *Mr. President:* I move that this Society extend to Dr. Hodges a unanimous vote of thanks for his very valuable paper.

The President: Gentlemen, that vote has been moved and seconded. It gives me much pleasure to call for your unanimous vote. Motion unanimously carried.

Dr. Hodges: *Mr. President and Gentlemen:* I wish to thank you for the courtesy that you do me. If you live in a city, like I do—among friends, it is true, but not the friends of my youth, not the friends of my boyhood, nor the friends of my early manhood—you can appreciate what I feel every time I come to North Carolina, for I always go back with a deeper love and a stronger affection and a purer adoration for the people I was born among than ever before. (Applause.)

You can appreciate the sentiments that I feel in being among my own people, and the feeble paper that I have read here this afternoon has been but a voice crying in the wilderness of medicine, earnestly asking that the physician and the surgeon work in harmony and in thorough cooperation, for the best interests of their patients. I believe, moreover, that medical and surgical science will be advanced thereby, for

living in a city, as I do, and spending much of my life in other cities, I know that specialism has run mad, and that somehow or other, the family doctor is about to pass away and be no more.

This paper was intended as a protest, gentlemen, against allowing the family physician to be forgotten in this great, supposed advance of medical and surgical learning, and that he be asked to operate and cooperate with the specialists; for all that we work for—not for money, not for plaudit, nor for praise,—is poor, suffering humanity, and I know you will join with me in doing all that you can towards that glorious end. And now I thank you again for your cordial kindness. (Applause.)

The following papers were then read:

"Vaccine or Tuberculin Therapy in the Treatment of Tuberculosis," read by Dr. H. B. Weaver, Asheville, N. C.

"The Treatment of Incipient Tuberculosis," Dr. J. E. Brooks, Greensboro.

"The Use and Abuse of Drugs in Tuberculosis," Dr. W. M. Jones, High Point, N. C.

DISCUSSION OF TUBERCULOSIS PAPERS.

Dr. G. L. Sikes: *Mr. President:* I did hope to hear, in the treatment of tuberculosis, some good instructions in regard to the preventive cure of tuberculosis, and as the western counties of our State are especially noted as the resort of tuberculous patients, I hope that the men, at our next meeting, will give us some preventive treatment along the line of tuberculosis.

Dr. Wm. L. Dunn, Asheville, N. C.: *Mr. President:* I would like to say just a few words in discussion of the papers that have just been read.

First, I would like to speak particularly concerning the paper of Dr. Weaver, in which he has emphasized "tubercu-

lin-therapy," to which he has applied the name, so popular to-day, "vaccine-therapy."

"Vaccine-therapy" primarily implied control of dosage by determination of the opsonic index, which has shown itself to be so impractical in use that it has been practically abandoned in the control of the administration of tuberculin. It has, however, served us one good purpose. The use of the term "vaccine-therapy" has given opportunity to many of the bitter opponents of tuberculin to back down gracefully from their extreme opposition to tuberculin.

It is a remarkable thing to me that I can learn of no man who has ever given tuberculin for any period of time, and used it properly, and in a sufficient number of cases to form a proper judgment, who has ever abandoned its use.

I want to raise my voice again, however, in the defense of the clinical method of administration of tuberculin in contradistinction to the administration controlled by the opsonic index. A method that has been in successful use for so many years can not be wholly wrong. I have used tuberculin for about fourteen years, and can not believe my methods have been altogether wrong. I do not think it is quite right to speak of the use of old tuberculin as a vaccine. As to any particular tuberculin, I think the statistics will show that the results obtained from the various tuberculins are practically the same. One who has familiarized himself with any one preparation should be slow to make a change. As to dosage, I feel sure that there will be some reaction from the extremely small doses which we are at present using. One of the greatest dangers of tuberculin-therapy is the tendency of those who use it to depend too much upon it and to neglect the dietetic-hygienic regimen which must always be the central point of treatment to which all other things must stand in the relation of an adjunct or aid, be that tuberculin or what not.

There is one other point: I wish also to say that Wright's method did not mark the beginning of an era of the proper

use of tuberculin. In my opinion tuberculin was used properly many years before Wright advocated the control of administration by determination of opsonic index. The word "cure" is used altogether too loosely, in speaking of tuberculosis. It is quite impossible for any man to know that a patient is cured of tuberculosis at the completion of any form of treatment, I care not what may be the physical signs of that patient. Time alone can determine this. It is my custom to never discharge a patient as "cured." I tell him that if he remains well for two years and does not react to a tuberculin test at the end of that time that he can reasonably consider himself as a cure.

I understood Dr. Jones to say that the treatment is not further advanced than it was a hundred years ago. I think he will find that position hard to maintain. As to mixed infection, we must not confuse laboratory and clinical mixed infections. In treatment of hemorrhage, if we use atropine, it must be used in large doses. I use from 1/30 to 1/20 of a grain at a dose.

Dr. J. E. Brooks, Greensboro: I do not know whether Dr. Dunn understood me or not in regard to the word "cure." I am glad he takes the position that he does. I tried to make myself clear on this point.

I repeat a sentence in my paper—"All tuberculous patients when cured, if cured, are cured conditionally." I said, "if cured," advisedly, because I doubt if any patient who has tuberculosis should be discharged as cured, without telling him that the disease is prone to return.

I think that in most instances the cases that return have not been instructed that the disease is liable to return, and that no doctor knows when a case is cured.

Dr. Weaver: I have nothing further to say.

"Report of a Case of Typhoid Cholecystitis," Dr. W. A. Graham.

DISCUSSION.

Dr. Highsmith: *Mr. President:* It is a pity we have such little time in which to discuss so many papers.

This paper is very interesting to me.

I would like to emphasize how many times, in typhoid fever, we have cholecystitis, going on to suppuration, and the importance of the general practitioner always keeping an eye open for just such cases as Dr. Graham reports.

I have a similar case—a lady fifty-six years old—who went through the stages of typhoid. She did not have any hemorrhage, but, according to all the clinical symptoms, it was typhoid fever. Occasionally she would have a high temperature, going down to normal, indicating pus. She became very jaundiced, and I opened and drained the gall bladder and found it filled with gall-stones—nothing but mucus or pus passing out—no bile; drained gall-bladder in the usual way, by a rubber tube attached to the peritoneum.

She made an uninterrupted recovery and has been well ever since. It is wonderful how these cases get well, once you relieve the diseased conditions that exist.

Dr. Kent, of Lenoir: *Mr. President:* Just a little matter. I was appointed chairman of the committee to look after the printing of the Constitution and By-Laws, and the copy that was recognized to-day as being the correct copy, was, by accident, lost among the Councilors. I would like for the pamphlet to be placed in my hands by whoever has it. It was in pamphlet form and is easily recognizable.

The President: Thank you, doctor. The gentlemen hear you and will doubtless act accordingly.

"Influenzal Arthritis," Dr. Philips, of Tarboro.

The President: I offer apologies to the doctor for not inviting discussion of his paper, but the small numbers and the growing lateness of the hour make it necessary that I now request the Secretary to make a report from the House of Delegates of the officers-elect and other items of interest.

THE SECRETARY: I wish to call attention to section seven in the By-Laws. It reads as follows: (Section here read.) We may, later in the year, call your attention to it again.

THE SECRETARY: The Nominating Committee organized with all members present. Dr. A. A. Kent, Chairman; Dr. John Hill Tucker, Secretary. The following is the list of nominations:

President—Dr. J. F. Highsmith.
First Vice-President.—Dr. C. M. Poole.
Second Vice-President.—Dr. D. A. Garrison.
Third Vice-President.—Dr. J. A. Dees.
Orator.—Dr. Charles W. Moseley.
Essayist.—Dr. W. L. Dunn.
Leader of Debate.—Dr. L. B. Newell.
Delegates to American Medical Association.—Drs. J. Howell Way, A. J. Crowell, these two gentlemen each two years; D. A. Stanton, one year.
Alternates.—Drs. P. J. Thomas, D. S. George, H. H. Dodson.
Finance Committee.—H. S. Lott, R. E. L. Flippin, J. M. Blair.
Obituary Committee.—Drs. Charles A. Julian, A. A. Kent, S. T. Nicholson.
Committee on Publication.—E. C. Register, W. H. Wakefield, D. A. Stanton.
Committee on Public Policy and Legislation.—Drs. R. H. Lewis, George G. Thomas, Albert Anderson and the President and Secretary, *ex officio.*
Committee on Scientific Work.—Drs. John Bynum, W. S. Rankin, and the Secretary *ex officio.*
Delegates to the Mississippi Valley Association.—Drs. W. O. Spencer, W. R. Kirk, M. L. Stevens, Cyrus Thompson, W. D. Pemberton, J. H. Shuford.
Delegates to the Virginia Medical Society.—Drs. J. S. Dalton, Jos. J. Philips, J. M. Williams, J. S. Gilbert, S. C. Heighway.
Delegates to the South Carolina Medical Society.—Drs. W. D. Witherbee, D. M. Dalton, J. F. McKee, R. J. Disosway and Earle Grady.
Next Place of Meeting.—Asheville, N. C.
Time of Meeting.—Third Tuesday in June.

DR. WEAVER: I move that this report from the House of Delegates be received by the Society. Motion carried.

THE SECRETARY: *Mr. President:* I have another little matter which the House of Delegates unanimously endorsed, which I will read:

At yesterday's regular session of the House of Delegates, Dr. J. Howell Way, the President of the Society, vacated the chair, and on behalf of himself and Dr. Laughinghouse introduced the following and moved its unanimous adoption:

WHEREAS, The people of the State of North Carolina have by a large majority vote, ratified an Act which, after January 1st, 1909, makes illegal the sale of intoxicating liquors in North Carolina, except upon physician's prescription; and

WHEREAS, The Legislature of North Carolina, in framing the Prohibition Law, did evidence great confidence in the medical profession of said State, by placing in the hands of said profession to an extent, the success or failure of the law, in that the members of the said medical profession are given the right to prescribe spirituous liquors at their discretion: Therefore be it

Resolved. First, That the Medical Society of the State of North Carolina in fifty-fifth regular annual session assembled, do hereby condemn as unprofessional and grossly immoral any lax or unfaithful conduct in its members in the exercise of the privileges conferred in this law.

Second, That the Medical Society of the State of North Carolina respectfully urges upon all the physicians of this State, whether members of this Society or not, to join us in demonstrating to the people that the members of the medical profession can be relied upon implicitly, to perform their full duty in aiding in the enforcement of the Prohibition Law, and in building up a public sentiment that will insure protection against an illegal traffic in intoxicating liquors.

Third, That the Medical Society of the State of North Carolina respectfully urges upon the State Board of Medical Examiners of North Carolina the manifest duty of revoking the license to practice of any physician who may be proven guilty of abusing the privilege accorded him in the prescribing of intoxicants.

J. HOWELL WAY, M.D.
CHAS. J. O'H. LAUGHINGHOUSE, M.D.

THE PRESIDENT, Dr. Way: These resolutions were adopted at my instance, unanimously, and without suggestion or dissent, by your House of Delegates, and are brought before you with the hope that you will, by unanimous endorsement, place the Society upon an unqualified record in dealing with this responsible question under the law.

DR. WHITTINGTON: I move, sir, that these resolutions be adopted and be allowed to take their proper course.

Dr. Sikes: In view of the resolutions that we have just heard read, and in view of the fact that our Christian advocates, the religious papers, the organs of our churches, are daily carrying in their columns the same advertisements that are poison to our country, and that the clergy are, by their use and patronage of quack narcotics, making dope fiends daily, we ask them to desist from carrying something in their papers which is poison to the people of our country, inasmuch as the physicians regard this as detrimental to the Christian work of our country.

I think, sir, the medical profession of our country ought to ask the ministers to take steps to remove poisonous advertisements from the columns of the papers that claim to be our Christian advocates.

The President: *Dr. Sikes:* The Chair appreciates fully the truth of what you have said, and there is probably not a physician of ten or more years experience present who does not recall more than a single instance in his own practice of ministers habitually using and recommending to their parishioners various and sundry mixtures that we know to be poisonous and hurtful "dopes"; but I gently call to your attention the fact that the House of Delegates in passing unanimously these resolutions was merely intending at this time to endeavor to "clean its own house," leaving the clerical offenders to their own consciences. I therefore ask that you do not insist on amending the resolutions. Is there further discussion of Dr. Whittington's motion? If not, those favoring it let it be known by saying "Aye." Those opposed, "No." Motion carried unanimously.

The President: *Gentlemen of the Medical Society:* It is apparent—at least it appears to be apparent—you know as presiding officer I am somewhat uncertain about things (laughter)—it appears to be apparent that we are very near the time for adjournment, and I am going to ask Dr. A. W. Knox and Dr. H. B. Weaver, two of the honored past Presidents of this Society, to present at the President's desk the

President-elect of this honored body. But before I do so I will trespass upon your time for about one minute to again extend to each and every one of you my sincere and hearty thanks and appreciation of the numerous honors that I have enjoyed at your hands, and also to thank you again and again for the uniform courtesy which you have shown me as your presiding officer during this session.

I thank you, gentlemen, and I retire from this chair feeling that I have enjoyed in occupying it the greatest distinction that ever came to me in my life, and I expect to receive none in future years that I esteem and shall prize more highly than the honor of having been your presiding officer.

Again, gentlemen, I want to say that as your presiding officer I may have made mistakes. My judgment and my rulings at times and my way of enforcing them may have seemed a little harsh or a little rasping, or perhaps grated at times upon the sensibilities of some of the gentlemen present; but I want to say, gentlemen, that if an error was made it was an error of the head and not of the heart.

I feel, gentlemen, that every one of you are my friends, and I retire from this chair and from this meeting with a heart full of affection and kindly feeling for every gentleman present.

I will now ask Drs. Knox and Weaver to escort the President-elect to the chair.

Dr. Knox: *Mr. President:* Before complying with your request you will pardon me if in behalf of this Society, as well as expressing my own sentiments, I desire to say a few simple and kindly words to yourself.

During the days of this meeting, and particularly during the exciting session this morning, deep feeling ran high, and there was great tension everywhere. You, sir, with admirable poise and great self-possession guided the great ship of this Society safely and wisely around some threatening submerged rocks, into safe, smooth waters, and the lowering clouds of a threatening storm subsided.

I think I may say that this Society and its members ap-

preciate most keenly your deliberate and thoughtful action, and emulating your example will go home with a determination to meet this thing that has arisen in a deliberate and dispassionate way, with good feeling among ourselves and toward yourself. We have sought in every way to get at the right management of that matter that came up this morning, and we will get at it in the right way, and we wish to say to you in parting—voicing I believe the sentiments of those present—the Society has for you, as I have, the highest esteem and the most kindly feeling. (Applause.)

The Society applauded as the President-elect, Dr. J. F. Highsmith, was led to the chair.

Dr. Weaver presented Dr. Highsmith to the President.

The President, Dr. Way: *Gentlemen of the Society:* It affords me great pleasure to introduce to you as my successor in this chair Dr. Highsmith, of Fayetteville, as your honored President, and in doing so I make no perfunctory statement that the Society has not only honored Dr. Highsmith by making him President of this honored body, but has likewise honored itself, for I feel that during the year to come and at the occasion of your next annual meeting it will be the proud privilege of Dr. Highsmith to discharge its important duties with fidelity, with honor and credit to himself as well as to this honorable body.

(Dr. Way then handed the gavel to Dr. Highsmith and retired to a seat in the body of the Society, and Dr. Highsmith assumed the duties of President, prefacing his taking the chair with the following remarks):

Dr. Highsmith: *Fellow-members and Brethren of the North Carolina Medical Society:* I have no words to express my feelings at this moment. This honor, which has come to me unsought, was like a clap of thunder from a clear sky. Little did I think that I would be made President of the North Carolina State Medical Society at this meeting. I had thought that I must work in the harness for some years to come before I could ever aspire to such a place.

And now I want to ask each member of the Society of the State of North Carolina and each physician of the State, who does not belong to the Medical Society, to join our body and let us mutually work together, hand in hand, and try by honest effort to equal the noble work that has been done by our co-laborers in the past, and if possible to make the coming year one of great success; one that shall be looked upon for coming ages as the turning point that made us a unit, brought us nearer together and dismissed from us all selfish desires, brought us in close contact and made us lay aside all selfish motives and seek science in its truest and best sense, that suffering humanity may receive all that is due it.

I shall attempt to do my full duty, and I hope that the members of the medical profession of our dear old State of North Carolina will uphold my hands, and will always feel free to come to me as the head of the profession for the coming year, to advise me, and that we conjointly may rule our State as it should be and as it has been in the past. I thank you again.

Dr. Weaver: *Mr. Chairman:* As I presume all of the papers have not been read I move that the remaining papers be referred to the Committee on Publication.

Seconded by Dr. McBrayer.

President Highsmith appoints the following chairmen of sections for ensuing session:

Anatomy and Surgery.—Dr. T. E. W. Brown, Asheville, N. C.

Practice of Medicine.—Dr. Edward J. Wood, Wilmington, N. C.

Materia Medica and Therapeutics.—Dr. John Q. Myers, North Wilkesboro, N. C.

Gynecology.—Dr. Hubert A. Royster, Raleigh, N. C.

Obstetrics.—Dr. A. B. Croom, Maxton, N. C.

Pædiatrics.—Dr. James J. Philips, Tarboro, N. C.

Physiology and Chemistry.—Dr. L. B. Newell, Charlotte, N. C.

Railway Surgery.—Dr. J. Vance McGougan, Fayetteville, N. C.

Pathology and Microscopy.—Dr. Watson S. Rankin, Wake Forest, N. C.

Medical Jurisprudence and State Medicine.—Dr. W. P. Holt, Duke, N. C.

Dr. Jewett: *Mr. President:* Is it in order to make a motion just now? Is it in order to present a motion?

The President: I would say so, sir.

Dr. Jewett: I would like to move that the President appoint a committee of three to investigate the cost of a publication of a monthly journal and consider the advisability of the Society establishing a journal to take the place of the published volume of Transactions.

In offering this motion, in the face of the contrary expression of opinion of our President in his address, I would say that several months ago I investigated the standing of the journals of those societies that have adopted State journals, and I wrote to each one of them and have in my hand replies from each and every one. They are all enthusiastic about it and claim that under no consideration would they return to the old form of the annual Transactions.

I ask that a committee be appointed to investigate this thing and report to our House of Delegates at our next annual meeting.

Dr. Weaver: *Mr. President:* I feel that that is a very important matter—an untried experiment in this State. I think it would require a very sagacious committee to attend to it. There are too few here now to consider so important a question as that.

Dr. Whittington: *Mr. President:* I second the motion for the appointment of a committee.

The President: It has been moved and seconded that the President appoint a committee of three to investigate the cost of a monthly journal and consider the advisability of the Society establishing such a journal to take the place of the volume of Annual Transactions, said journal to be published under the guidance of the House of Delegates, and that the committee be requested to report at our next annual meeting.

Dr. Knox: I desire to offer an amendment to that motion: That the President, if that motion is carried, appoint

this committee at his leisure, after an adjournment is taken, so that he will have ample time to consider its personnel.

Dr. McBrayer: That is a very important matter, sir. I move that that be referred to the Committee on Publication. It seems to me that that would be an appropriate committee. I move, then, to amend the motion of the appointment of the committee by referring it to the Committee on Publication.

Seconded by Dr. Laughinghouse.

Dr. Jewett: *Mr. President:* I do not see how it is exactly proper for such an amendment to this action, for the simple reason that at least one of the Committee on Publication has already expressed himself as decidedly opposed to any such action. Dr. Register, as editor of the *Charlotte Journal,* wrote an editorial some months ago in which he opposed any such action, and did not uphold State Society journals in general.

The idea was to have an independent committee, one thoroughly neutral, to investigate the matter and find out for themselves whether or not it would help this Society. And that is all that the committee is for—simply to investigate it and find out whether it is a desirable thing to do, and report it to the House of Delegates for their decision and action.

Dr. Whittington: I feel that this amendment ought to be voted down from the fact that it will not enable us to get at the very thing we wish to get at. I am sure the maker of this motion—nor do I intend any thrust at the *Charlotte Medical Journal,* at the Publication Committee, or at the manner of getting out the Transactions of this Society—and this is merely for the consideration of this body; and that is more impartially gotten at by referring it to a committee, and not to the Publication Committee, since one of the committee is editor of the *Charlotte Medical Journal.*

I thought that the *Charlotte Medical Journal* had been adopted as the organ of the North Carolina Medical Society.

Then my remarks are in opposition to the amendment, and I contend for the original motion.

The President, Dr. Highsmith: I fully realize the importance of the situation and shall not appoint any committee now, and shall give it further consideration, and I feel that I should appoint a committee who will look after the thing with the same care as the Committee on Publication would.

Dr. Way: I move that we now adjourn *sine die.*

Dr. Weaver: I second that motion, that we now adjourn *sine die.*

(Cries of "No," "No." "Vote that down.")

Dr. Knox: I ask that the President put that motion to the house.

Dr. Way: *Mr. President:* I renew my motion that this body do now adjourn *sine die.* And since you have delayed the putting of an undebatable motion, by courtesy, I wish to say I understood when I came to this meeting three days ago that a move would be made during the meeting for the establishment of a Society journal. I have listened in the House of Delegates, which is the duly appointed place to consider all such business propositions, and not here, for some movement there looking towards a journal establishment, and no move was made. Nearly four hundred members have been here this week.

As a member of this Society I emphatically protest against the introduction of such an important matter on the eve of closing, with only a handful of men in the house—not ten per cent of the registered attendance—and within a very few minutes of the train that several of us expect to go upon. That is my reason, and again I move that we adjourn *sine die.*

Dr. Whittington: Dr. Way has been allowed to debate that question, and I want to say it is evident that some of the members of this Society do not want this question considered, and I have my own opinion as to their reason, and I

therefore beg that we vote down this motion to adjourn and that we shall be allowed to vote upon this thing.

There are now more members in this house by twice than the members that constitute the House of Delegates, and it is to their interest that we be allowed to vote upon this thing. I appeal to the members to vote down this motion of Dr. Way's and that we be allowed to vote on this committee.

Dr. Way: In renewing that motion to adjourn I said "by courtesy," and nobody objected. Waiting a moment I made an explanation as to why that motion was made. I renew the motion that the meeting adjourn *sine die* and demand, Mr. President, a vote.

The President: All in favor of adjourning let it be known by rising. (Fifteen arose.)

All opposed to adjourning please rise. (Thirteen arose.)

The President: *Gentlemen:* I declare the house adjourned *sine die.*

J. Howell Way, M.D.,
President.

D. A. Stanton, M.D.,
Secretary.

North Carolina State Medical Association

FIFTY-FIFTH ANNUAL SESSION

Winston-Salem, North Carolina, June 16, 1908

FIFTH ANNUAL SESSION OF THE HOUSE OF DELEGATES

The House being called to order by the President, the roll being called, the meeting proceeded to call the Council for the different districts as follows:

First District—Dr. Oscar McMullin. Absent.
Second District—Dr. R. A. Whitaker. Absent.
Third District—Dr. F. H. Russell. Present.
Fourth District—Dr. Albert Anderson. Present.
Fifth District—Dr. J. F. Highsmith. Present.
Sixth District—Dr. H. A. Royster. Absent.
Seventh District—Dr. C. M. Strong. Present.
Eighth District—Dr. J. B. Smith. Present.
Ninth District—Dr. Isaac M. Taylor. Present.
Tenth District—Dr. J. A. Burroughs. Present.

Upon the roll-call of delegates representing the different counties the following reported:

Currituck—None.
Pasquotank-Camden-Dare—Dr. H. D. Walker.
Perquimans—R. M. Smith.
Hyde—Dr. J. A. Mann.
Hertford—None.
Martin—Dr. J. H. Saunders.
Pitt—None.
Bertie—None.
Beaufort—Dr. S. T. Nicholson.
Lenoir—Dr. J. M. Parrott.
Jones—No report.
Craven—Dr. N. M. Gibbs.
Pamlico—Dr. D. A. Dees.
Carteret—Dr. D. S. George.
New Hanover—Dr. E. J. Wood.
Pender—None.
Onslow—Dr. J. L. Nicholson.
Duplin—Dr. J. L. Lane.
Bladen—None.

Sampson—Dr. G. L. Sikes.
Columbus—Dr. L. Brackett.
Brunswick—None.
Northampton—Dr. H. W. Lewis.
Halifax—None.
Nash—None.
Edgecombe—Dr. J. J. Philips.
Johnston—Dr. J. B. Person.
Wilson—Dr. E. T. Dickinson.
Wayne—J. D. Roberts.
Greene—Dr. W. B. Murphy.
Cumberland—Dr. K. G. Averitt.
Robeson—Dr. A. B. Croom.
Scotland—None.
Richmond—None.
Montgomery—Dr. J. B. Shamberger.
Moore—Dr. R. W. Palmer.
Harnett—Dr. W. T. Holt.
Chatham—Dr. W. M. Burns.
Wake—Drs. Chas. V. Wilkerson and R. H. Lewis.
Franklin—None.
Warren—None.
Vance—Dr. John H. Tucker.
Granville—Dr. S. D. Booth.
Person—None.
Caswell—Dr. M. H. McBride.
Alamance—Dr. George W. Long.
Durham—Dr. T. A. Mann.
Anson—None.
Union—Dr. J. M. Blair.
Stanly—Dr. T. A. Hathcock.
Mecklenburg—Drs. J. P. Munroe and E. C. Register.
Cabarrus—Dr. W. D. Pemberton.
Lincoln—Dr. C. D. Thompson.
Gaston—Dr. D. A. Garrison.
Cleveland—Dr. R. C. Ellis.
Rutherford—Dr. T. B. Lovelace.
Rockingham—None.
Guilford—Drs. J. T. Burrus, J. P. Turner and Edmund Harrison.
Randolph—Dr. S. A. Henley.
Forsyth—Dr. J. L. Haines.
Stokes—Dr. L. H. Hill.
Surry—Dr. S. T. Flippin.
Yadkin—Dr. T. W. Shore.
Wilkes—Dr. J. Q. Myers.
Ashe—None.
Davidson—Dr. J. E. Buchanan.

Davie—Dr. Thos. D. Watkins.
Rowan—Dr. R. V. Brawley.
Iredell-Alexander—Dr. J. E. McLaughlin.
Catawba—Dr. H. C. Menzies.
Caldwell—Dr. A. A. Kent.
Watauga—
Mitchell—None.
Burke—Dr. Isaac M. Taylor, alternate.
Buncombe—Drs. C. V. Reynolds, T. E. W. Brown.
Yancey—Dr. C. P. Edwards.
McDowell—Dr. B. L. Ashworth.
Madison—Dr. J. C. Tilson.
Henderson-Polk—None.
Haywood—Dr. J. R. McCracken.
Transylvania—None.
Jackson—None.
Swain—None.
Macon—None.
Clay—None.
Graham—None.
Cherokee—None.
Vance—Dr. J. H. Tucker.
Alleghany—Dr. J. L. Dowdy.
Washington-Tyrrell—Dr. W. H. Ward.

The President put the motion that the delegates answering the roll-call be declared as representatives.

Motion seconded and unanimously adopted.

Dr. Jas. A. Burroughs put the motion that a committee of three be appointed to consider and preserve the President's message.

Motion seconded. Motion adopted.

Following committee appointed: Drs. E. C. Register, E. J. Wood, J. A. Burroughs.

Reports of committees called for.

Dr. E. C. Register, for the committee, reported the following, which was unanimously adopted:

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

Your Committee appointed to consider the President's address and report on same beg leave to offer the following suggestions:

First. That a vote of thanks should be and is hereby tendered our distinguished and learned President for his masterly presentation of a subject of such great and genuine interest to every member of the

State Medical Society, for the pleasing style and delightful sketches in which it abounds, and for the logical order of arrangement which shows so clearly the to and fro movements of sentiment and idea, which at various times have characterized the dominating thought of the profession.

Second. That no one has shown himself so well qualified to address the society on this subject as has our honored President. At all times himself a most ardent and zealous disciple of the healing art, he has unfailingly shown himself ready to acknowledge the worth of others, and enthusiastic in the bestowal of praise and honor where it is due. An untiring and unselfish worker in the upbuilding of the society and the advancement of the science of medicine, he finds inspiration in the worthy deeds and lives of those who, in the past, have toiled in the heat of the noontide, and his tributes to those whose names are written indelibly upon the records of our progress, could find birth only in the heart of a man whose devotion is as pure as his zeal is boundless.

Third. That in presenting this address the President has performed a service of inestimable value to the whole society, but especially to those younger men who are just entering upon their participation in the affairs of a society in the history of which there is a heritage of noble names and noble devotion, unsurpassed in the annals of any medical society. A review of this kind your Committee believes to be timely in that we have become too negligent in honoring the heroes of our profession.

Fourth. We recommend its publication and commend its careful perusal by our membership.

Finally, we heartily endorse the expressions therein contained relative to the glorious prospects which confront the profession of to-day and concur in those optimistic utterances which would lead us onward and upward, higher, higher.

E. C. Register,
E. J. Wood,
James A. Burroughs,
Committee.

Approved.

The Secretary's report was called for and submitted as follows:

REPORT OF THE SECRETARY, DR. D. A. STANTON.

Winston-Salem, N. C., June 16, 1908.

Mr. President and Gentlemen of the House of Delegates:

I beg to submit herewith my second annual report. The work of your Secretary for the year just closing has been much heavier than last year, not that there was so much more work to do this, than last, year, but by reason of experience I had a clearer conception of the work and that of itself multiplied duties.

I have the same charge to prefer against some of the county secretaries that I had last year, viz, indifference regarding their annual report of membership of their county society. If this defect could be overcome the work of the Secretary would be more satisfactory, and the welfare of the State Society enhanced.

At the time of this report, eighty-two counties have filed their reports (eleven more than had reported at the 1907 meeting), giving a total membership of the State Society to date eleven hundred and forty-six, a few more than half the physicians in the State.

The gains in new and reinstated members is one hundred and twenty-seven, and by the time the proceedings of this meeting go to the press, enough delinquent counties will have reported to make a membership of twelve or thirteen hundred.

The State Society is in a healthy condition, by far more interest has been manifested in this meeting than was evidenced in the meeting of 1907.

One of the forcible effects of the good of organization is seen in the victory won in the matter of life insurance examinations. Three years ago the profession of this State was in a state of chaos because of the effort of the life insurance companies to have their examinations made for $3.00, and because of a disposition on the part of some of our members to acquiesce to their demands. The better element of the profession took a firm stand against such an injustice to the intelligence of the profession, and during the past year we have had the satisfaction of being informed by every company worthy the name of a life insurance company that they would pay the old fee of $5.00 in the future. I doubt not that nine-tenths of the old examiners who resigned have been reinstated to their old places as examiners. This is one evidence of the good there is in organization.

Since my connection with the profession of the State in an official way, I have learned a great deal about physicians that I did not know before; have learned to both love and pity; love those who have a just appreciation of their high calling, and pity those who are content to rest on their attainments acquired at college.

The medical profession is too broad and too progressive for any one to stand still who takes upon himself the responsible duty of administering to the sick and advising the well how to keep well, yet quite a large per cent of the physicians of to-day are content to rest on what they knew the day they received their license, while others saw that the knowledge which entitled them to a license was only a foundation upon which to build a superstructure which would reflect credit upon the profession. This latter class not only have their own burdens to bear but have also to bear a good portion of the dead load of the former class.

There is one thing evident to all thinking physicians, if we expect to measure up to a full realization of our position, and place the medical profession where it rightly belongs relative to the public—

and after all it is the public we serve—there are a few reforms which will have to be brought about. I have never been in favor of going into politics, but it does seem that we shall have to make ourselves felt along that line if we ever get what is so badly needed to elevate the profession to that point where we will be considered other than neighborhood conveniences. If the medical profession of North Carolina would exert its power and influence on the Legislature as the professional politician does, it would take but two years to work a reform that in a decade would so change the status of the profession that the benefits to the public would be so manifest that when we asked for future legislation a deaf ear would not be turned to us.

This is not the place, and time forbids going into a discussion of the many factors patent to all, but the temptation is so great to refer to them and the necessity so urgent for legislation that will result in good to this commonwealth through the medical profession that I can not resist referring to them.

The medical profession has already done wonders, but the domain of our usefulness has scarcely been invaded. The profession has always been handicapped because we were not felt as a factor in politics. Because we are physicians and modest in all we do, never going before the public in that braggadocio manner which characterizes some other citizens, is no reason we should be overlooked by those in authority to give us what we need to do still greater things.

It has ever been the opprobrium of the medical profession that its members are prone to jealousies and uncharitableness towards each other, and many are the unseemly stories and jokes that this condition of affairs has given birth to and fostered. Much stress is laid upon the statement that in other professions, as the law and the ministry, this does not obtain; and this assertion is accepted as true by the public without pausing to consider that the frailties of human nature enter into the business affairs and ambitions of those professions as it does into ours; and that the contest and rivalries for place, preferment or money are just as keen, and, in event of failure, are just as disappointing as they would be in the case of any physician.

That the medical profession has been compelled to bear the chief odium in this respect is not strange, when we consider how largely it outnumbers the various other professions, and how intimate is its relationship with the community at large. A large per cent of each community does not attend the churches, and a large per centage does not have recourse to law; but practically every one has, at some time or other, need of a physician. It is thus that the unkind word of criticism has a much larger audience than obtains with any other calling, and in the course of time has given rise to the fiction that only in the medical profession does uncharitableness prevail.

Unhappily, many physicians are unkind to their brethren, and perhaps there will always be some who are, but it is the concensus of

opinion of the profession of the entire country that in recent years a marked improvement has been observed in this respect.

Many forces are at work bringing about this changed relationship, but none has been so potent as the various medical societies, and particularly the County Medical Society, which brings together the doctors from various localities, and permits acquaintanceship between those who otherwise would never meet or know each other. It is surprising how the preconceived opinions that are formed, frequently unkind or antagonistic, disappear upon closer observation; traits that were unknown are discovered, unsuspected mental capabilities are revealed, a lovable character is unfolded, and the previously unknown now commands the respect and esteem that must be given to one who is recognized as honest, brave and true. It is a matter of great regret that in every county there are some who do not realize the loss they sustain by reason of nonmembership and nonattendance upon the County Society—a loss that can not be expressed in terms of commercial exchange—but loss in the good will and good fellowship that is there given and received; and loss of the privilege to instruct others.

But there is a commercial side to the question of membership. Various positions of profit that only a physician can occupy are withheld from the nonmember of the Medical Society. The impression prevails, and correctly so, that the members of the county and State societies exert a greater influence in their community, are better informed upon the medical questions of the day, and are the more safe and reliable counselors, no matter in what capacity their assistance may be sought. It is impossible for a physician to frequently mingle with his associates in the profession without receiving benefit in all the essentials that are considered requisite for the successful practice of his calling; and in depriving himself of the privileges and opportunities that are thus placed at his disposal, is doing himself a greater injury and injustice than will ever be visited upon him by a colleague.

If the profession is to be more fully organized, if the State society is to grow in strength of numbers and efficient workers, if it is to be a factor in securing good legislation for the people, these results must come chiefly through the efforts of the county secretaries. While a number of the county secretaries have done good work, too many have failed to even answer my inquiries.

In closing I have one direct request to make of the House of Delegates, viz, that the County Secretaries be asked to organize themselves into a working body called the Association of County Secretaries, and that they be asked to meet some time during the session of the State meeting in 1909, that they may discuss the best ways and means to a more complete gathering into the State Society, the many who are now without the fold of the State Society.

Two other requests: First that the House of Delegates fix a date for holding the annual meeting as provided by the Constitution. The

past two years it has been necessary to change the date. This gives additional work and some expense and causes some confusion.

Second: That great care be exercised in the election of delegates to the A. M. A. At the past two sessions of the House of Delegates, delegates were elected who were not eligible and the mistake was not discovered till near the time of meeting of the A. M. A. This oversight caused trouble and disappointment to the illegally elected delegates.

Fraternally submitted, D. A. STANTON,
Secretary.

Dr. Booth moves that the report be adopted by the House with thanks to the Secretary for such a full and interesting report.

Motion seconded and unanimously adopted without discussion.

REPORT OF TREASURER.

We, the Committee appointed by the President to audit the Treasurer's books, beg to submit the following report:

Balance on hand, June 13, 1907	$1,912.30
Dues collected	2,123.50
Interest	12.38
Total	$4,048.18
Disbursements	1,656.16
Balance on hand, July 1, 1908	$2,392.02

WM. MONCURE,
K. P. BATTLE, JR.,
C. O. ABERNETHY,
Committee.

July 1st, 1908.

REPORTS OF COUNCIL.

First District—Oscar McMullin. No report.
Second District—R. A. Whitaker. No report.
Third District—F. H. Russell. No report.
Fourth District—Albert Anderson. No report.

(Dr. Anderson having moved out of the district it was suggested that a Councilor be appointed in his place if a vacancy existed. The Chair ruled that the removal from a district of a Councilor forfeits his official position, and declares a vacancy in that district.)

Fifth District—J. F. Highsmith. No report.
Sixth District—H. A. Royster. No report.
Seventh District—C. M. Strong. No report.

Eighth District—J. B. Smith. No report.
Ninth District—Isaac Taylor. No report.
Tenth District—J. A. Burroughs.

The Tenth District is in a fairly healthy condition and getting on very well. Yancey County has been reorganized. In Cherokee and Graham, the territory was so large that with the advice of Dr. Way and myself, they have organized separate societies. They are now going to work in Polk County. A greater measure of harmony exists in the profession than before the organization.

MR. PRESIDENT: Does the House desire to take any official cognizance of the Council's report more than to enter it upon record?

DR. J. M. PARROTT: I make a point that the State Medical Society depends largely upon the efforts of the Councilors in their respective districts. Without any reflection whatever upon the work of the Councilors, I say that 90 per cent of the State has not been looked after by the Councilors as the Society provides that it should be looked after. If the Councilors are not beneficial to the Society it is the duty of the Society to do one of three things:

First (and that is the course I advocate), to urge the Councilors to attend to their business or resign and put somebody else in.

Second, to make some provision by which the expenses of the Councilors, when officially engaged, may be paid by the State Medical Society.

Third, to let the matter stand as it is.

I am opposed to letting it stand as it is. I claim that they have not done their duty, and I want to urge the Councilors to perform their duty in accordance with the Constitution. I am not cognizant of one single official action in my district by the Councilor. If he proposes to get out and do his duty then continue his services; if not, let him "Shoot Luke, or give up the gun!" I gave up the position when I held it on account of the expenses of it. I thought when a State Medical Society has a balance of $1,000 to $2,000 in its treasury it was its place to go down in its pocket and pay my hotel fare and general expenses.

Our Councilor is a first-class gentleman and one of my best friends. All I blame him for is for accepting the position and not doing anything.

I request that the Councilors be urged to become more active in their duties and that their traveling expenses be disbursed by the State Medical Association.

Motion seconded.

Dr. S. D. Booth: I am sorry that the member of whom he speaks is not present. The Councilors have assumed a great deal of duty. They should attend to it, and to pay their expenses when in official work is no more than necessary.

We have had a district meeting every year and it has been a very good meeting. These district meetings have done a great deal of good, and I think it is right to pay the expenses of the Councilors. I think that would be an inducement to them to go out and do the work.

Dr. Rodman: We have a clause that provides for the payment of expense.

Dr. Monroe: That is all provided for and I think that explains to a great extent why these people have not done their duty.

Dr. Lewis: I find that the expenses of Councilors may be paid by special action of the House of Delegates.

Dr. Parrott: I presented my bill to the Treasurer, but he seemed to think there was no machinery sufficient to get money out of the treasury. I move that the Councilors be urged to renewed activity and that their traveling expenses be paid by the Society.

Motion seconded and carried.

Dr. Lewis: I move that we present the bill of Dr. Parrott to the House of Delegates.

Dr. Parrott: That places me in rather an embarrassing position. I care nothing about it at this time.

Dr. Monroe: I move that all necessary traveling expenses of all Councilors may be presented for payment.

Dr. Stanton: When I look back over the years since the Councilors were elected to the various districts I must take position against that amendment. The Councilors have gone to a great deal of expense, they did it cheerfully. I was one of them myself in my district. I went over my district and with other councilors went to Raleigh to confer with members of the Legislature on the call of the then Secretary, Dr. Way, and not one of us made any charge for time or expenses, and I wish to say the work done then was more exhaustive and laborious than any year since as that was the year we effected our splendid organization of County Societies. I did not keep a memorandum of my expenses and I could not now recall them. I have no objection to Dr. Parrott having his expenses, but I would not be willing to go back three or four years and get up every expense. Besides, I do not want it. There are some services neither organizations or men may pay for.

Dr. Parrott: I appreciate that motion. I certainly don't want any back pay for what I did at that time. I would be delighted if the motion of Dr. Monroe be withdrawn.

Motion withdrawn.

Communications of general meetings of the Society called for.

None.

ROLL-CALL OF COUNTY SOCIETIES FOR SPECIAL REPORTS.

Alamance—Dr. Long: Nothing special to report, but the Society is getting very lax and does not do much work. We have a good deal of material that we do not appreciate. We have passed through a great many troubles because we could not assimilate the material we took in. We are not disorganized, neither have we made any great progress. We are very inactive and indifferent.

Anson—No report.

Beaufort—No report.

Bertie—No report.

Bladen—No report.

Brunswick—No report.

Buncombe—No report.

Cabarrus—W. D. PEMBERTON: We have our meetings monthly. It is very seldom that the members meet. We have never yet been able to have a quorum. We have no clinics, but read and discuss papers, and I think the Society is doing a great deal of good promoting good will and fellowship among members of the profession.

Caldwell—A. A. KENT: Some of the members have not been attending regularly recently and have lost their membership in that way. We have our regular meetings every other month. We have very good papers and discussions and fairly interesting clinics.

Carteret—No report.

Caswell—DR. M. H. MCBRIDE: We only meet twice a year, some of us live so close to the line and it is so far to go. We have a small quorum, and we are trying to hold together. We have good meetings twice a year.

Chatham—DR. BURNS: We have had several meetings, but no good attendance.

Cherokee—No report.

Cleveland—No report.

Columbus—No report.

Craven—DR. N. M. GIBBS: The Society is in very good condition. We do not have the membership of the whole county. Some of the physicians live a good distance from the place of meeting. Those who live close attend. We are standing pat on the $5.00 insurance fee. One of the members has fallen out, but he has promised to do better and we have reinstated him.

Cumberland—DR. AVERITT: I am glad to report that we have a very thrifty County Organization. All of the physicians except two are members. We have meetings once every month. The profession is moving on harmoniously. Everybody seems to be in good fellowship. We have all the members of the profession in our Society except two men.

Currituck—No report.

Davidson—DR. J. E. BUCHANAN: We have a membership of 17 members. Every physician in the county is a member of the Society. Every physician is ready to take each other by the hand, and call him brother. We have quarterly meetings and some very interesting papers.

Davie—No report.

Duplin—DR. LANE: Our Association is very active.

Edgecombe—DR. PHILLIPS: Our Society is not in good condition. We have not been successful in securing all of the physicians in the county. It seems it will be impossible to secure some. The Society is in perfect accord with the State Medical Society.

Forsyth—DR. HAINES: Our Society is in good condition, every physician in the county being a member. We have monthly meetings, and read papers, and discuss them.

Franklin—No report.

Gaston—Dr. D. A. Garrison: We have every licensed physician in the county in our Association. We have a meeting every month at which time we read papers and have interesting discussions. We have a membership of 28, and there are from 7 to 20 present during each meeting. They manifest considerable interest. We are getting on so much better than before we organized. There are no physicians there taking other's cases. That prevailed there when I went. I am very glad that is out. Everybody is in good fellowship.

Gates—No report.

Granville—Dr. S. D. Booth: The Society is not as good as might be. Some of them do not pay their dues. The Secretary has been thinking they would do so, but they are slow. The greatest trouble is in getting our members to attend the meetings. I am the President, and I tried the last meeting to get a new President. I was thinking that might help the Society. They are all in good fellowship when they are there and when they are not there. If you will tell me what to give my members to get them to come out, I will try it. (Barbecue is suggested.)

Greene—No report.

Guilford—Dr. Turner: We have a good Society. Since the County Society became a unit with the State Society, we have built up one of the largest County Societies in the State. We have nearly every physician in the county in attendance. We have good attendance at our meetings. We have several reports of cases that are very interesting, indeed. We are growing in fellowship and grace, and the little bickerings that are sometimes so common are disappearing. We don't know whether or not another county is represented here by three delegates or not. However, I am one of three sent here by Guilford to represent her in the State Society. I am glad to be one of these three. We are growing better and getting better, we are bound to get better, we are getting closer together. All any of us need is to rub up against each other. We get out among our patients and get a little careless, but when we come out to the State Society and rub up against the other fellow, it helps us. We always get some good out of a meeting.

Halifax—No report.

Harnett—Dr. J. W. Halford: We have a good, healthy Society. We are doing very good work, we have monthly meetings, papers read and discussed and occasionally, clinics. We have managed to arrange our business affairs to be able to attend. We understand each other better. Our Society includes every licensed man in the county. The only reason we do not have a larger attendance, is not because we do not have barbecue.

Haywood—Dr. McCracken: We have a Society there in good fellowship. We have when we meet interesting meetings and good papers discussed.

Henderson—No report.

Polk—No report.

Hertford—No report.

Hyde—Dr. Mann: We have an interesting Society in our county and every active physician is a member except one.

Iredell-Alexander—Dr. McLaughlin: We have an organization in our county that is some a-kin to Dr. Booth's. We have about 20 members, I have been Secretary and Treasurer all the time, but have never been able to get much out of it. We have several doctors who are not members of the Society. The trouble that gives us most annoyance is the members failing to attend, failing to be on hand in time. Some members will come from away out in the country and be there waiting while the other fellows who are right there at the Court-house, are slow to come in. Some of the doctors are slow to pay. I send them statements and do the best I can. Everything is harmonious.

Jackson—No report.

Johnston—No report.

Lenoir—Dr. Parrott: Lenoir has got her head in the air, and her tail over the dashboard.

Lincoln—Dr. C. D. Thompson: We recently had all the active physicians of the county. Three of them have dropped out during the past year, one of them resigned as President and has not returned to the Society. We had the meeting monthly until recently when we decided to meet bi-monthly. Our meetings are like the Iredell meetings. We have one unlicensed practitioner in our county. He has been living up there all his life and been practicing about 15 years. Recently when a young doctor moved into his territory he didn't get any work. He asks that the State Medical Association remedy this if possible. If any action can be taken, it will be appreciated.

Dr. Booth: I am surprised that a man would dare practice in your county without license. If any one comes into my county and attempts to practice without license, it is reported to me. I am President of the County Society. I report it to the Grand Jury and the Solicitor and if it is necessary, I report it to the State Medical Society, who takes its money out of its pocket and prosecutes the man. If that county does not feel the necessity of employing lawyers, the State Medical Society will do so. It does seem that the doctors would get together and put public sentiment in such shape that that man would not dare do that. I just wish some one would try it in Granville and I would like to get on his track.

Dr. C. D. Thompson: This man is a very good practitioner. He has applied himself to his studies and has been in college one year. He lives among his friends and relatives and they are all in good standing in the county. If we take action on this man, we are sure that a rebound will be felt. This is the reason why we ask that the State Medical Society take action.

Dr. Geo. W. Long: Every county in North Carolina is presumed to have its court in session all the time. Everybody that practices medicine is registered in the county. It looks like the courts would take hold of this man. The party from Lincoln made a remark that is very suggestive. Granville County is a high-toned county with good schools and many more advantages that Lincoln County does not have. The fact of the business is, the people there in Lincoln are not educated up to the standard. There is nothing in the world to do, but go to the Clerk of the Court and see if the man is registered. If he has his name registered and has the certificate of the Clerk of the Court, he has a right to practice.

Macon—No report.

Clay—No report.

Madison—No report.

McDowell—No report.

Mecklenburg—Dr. Monroe: Our Society meets every two weeks or twice a month. There was some hesitation at first, but now we have a good Society with 66 members. We were really entitled to 3 delegates.

Mitchell—No report.

Moore—W. A. Monroe: Moore County has a very good Society. Meeting every three months. Very good fellowship. We have papers read and discussed at every meeting.

Montgomery—Dr. J. B. Shamburger: Our county has a very good Medical Society. It has all 8 physicians in the county.

New Hanover—Dr. Wood: New Hanover County is in the extreme, I am sorry to say. We used to have a Society, but the conditions in the county are now very unfavorable. It takes about 6 calls to get a quorum, and if we do get a quorum, the meeting and discussions are usually shut off by some fellow making a motion to adjourn. There is good fellowship.

Northampton—H. W. Lewis: Nothing of interest to report. We have about 12 doctors, and we meet about two or three times a year. I tried to get them together before the State Society met, but could not.

Onslow—Dr. J. L. Nicholson: We are few in numbers and live very far apart. However, we have some features that we have heard no other representatives mention. We very often invite some other parties from other societies to be with us and have some interesting subject for discussion.

Pamlico—Dr. D. A. Dees: We all stick together.

Camden and Dare—Dr. Walker: We have monthly meetings and always have papers read and topics for discussion. We had a man there who failed to get his license two years ago. We had him indicted and tried. The Judge only fined him $25.00. He is making preparations to go away.

Pender—No report.

Perquimans—No report.

Pitt—No report.

Randolph—Dr. S. A. Henly: I am very sorry to say it is in a sickly condition. At one time we had a very flourishing Society. But now about half of our physicians do not take any interest in it.

Richmond—No report.

Robeson—Dr. A. B. Croom: We have a very thriving Society down there. We have 28 members, all of the physicians in active practice are enrolled with us. Two of the doctors are not members of our Society. One of them does not do much; he has other business that occupies his time. One resigned on account of the life insurance matters. We meet once every month. We keep certain statistics in the hands of the Secretary in regard to attendance.

Rockingham—No report.

Rowan—Dr. R. V. Brawley: Every physician in the county is a member of the Association. Everything in good condition.

Rutherford—Dr. E. B. Harris: We meet every month. We usually have two papers to discuss. We seldom miss a meeting. Before we organized our Society there was some disagreement in the county, but now all is agreeable. Now, every physician except two are active members. We meet quarterly. We always have one good paper for discussion. One member is appointed each meeting to prepare a paper for discussion the following meeting. The only hindrance is that a great number of the physicians are in too big a hurry to set off discussion of matters that come before the Society. I think our Councilors could do a good work in visiting other societies.

Scotland—No report.

Stanly—Thos. A. Hathcock: Our Society is not doing very active work. We are meeting about every two months, but not regular. Every doctor is supposed to be a member. The Society has been beneficial. A better feeling is prevalent than formerly and there is more evenness among the fellows. Altogether, the Society is very beneficial. One man tried to practice in Stanly without license but it got so warm for him that he had to move. There is one itinerant doctor who runs down in the country and does some work.

Stokes—No report.

Surry—Dr. S. T. Flippin: I was just thinking we had a very healthy Society, but since hearing the reports of some of the other representatives, I am inclined to think that ours could do better. It is very interesting to me. I have to drive over about twenty miles of the roughest road a man ever went over to get there and when I do get there, I have to go round and hunt up some of the other fellows before we can have a meeting. Now, that makes it very interesting indeed, to me. They are so awful busy there in the town. There must be more sickness there than in the country. I can't report like some of them have. We have three physicians in our county who are not members, nor, indeed

will they ever be. One of them is about 70 years old, but still he practices medicine. One is the son of this man and he has his back up against organizations because his daddy don't like 'em. I am mighty glad I can report the condition of our Society better than before.

Swain—No report.

Transylvania—No report.

Union—Dr. Blair: Every doctor except one in the county is a member of the Society in good fellowship.

Vance—Dr. J. H. Tucker: Society is in good condition, we have monthly meetings.

Wake—Dr. Lewis: The interest is good on the part of the country members, but feeble on the part of the city members. We have monthly meetings, discussions, and once a year, we have a barbecue. There is good fellowship.

Washington—No report.

Wayne—No report.

Wilkes—Dr. J. Q. Myers: Our Society was organized about five years ago and has been doing good work ever since. We meet every month. We missed some meetings last winter during the bad weather.

Wilson—No report.

Yadkin—Dr. T. W. Shore: The Society is in very good condition, all physicians belong to it except one.

Yancey—No report.

Buncombe—Dr. Burroughs: We have 56 paid-up members. Meetings twice every month. We get after every man practicing without license and soon drive him over the line. We have successfully fought the insurance matters.

Representative from Surry—Dr. Flippen: I wanted to say that there is a so-called cancer doctor who comes down into Surry every once in a while and injects medicine into every little tumor, and as a result the undertaker has the next job.

There being no further reports President announced the selection of a Nominating Committee in order and declared a recess of a few minutes in which to allow the members of each district to make their selection.

The session was resumed and the House duly appointed the following as a Nominating Committee:

First District—H. D. Walker.
Second District—S. T. Nicholson.
Third District—J. L. Nicholson.
Fourth District—M. Bolton.
Fifth District—J. W. Halford.
Sixth District—Jno. Hill Tucker.

Seventh District—E. C. Register.
Eighth District—Jno. Q. Myers.
Ninth District—A. A. Kent.
Tenth District—T. E. W. Brown.

The names read were declared elected and it was requested that they get together and be ready to report at the session the following morning.

New Business.—None.

Reports of Counties.—None.

Unfinished Business.—None.

Dr. Kent: I think it would be well if some place could be designated as a place where we could meet and organize the Nominating Committee. I think it would be well for some place to be suggested where we could come together as a nominating committee.

The President: It is suggested that the committee meet to-night at half-past eight o'clock at the Zinzendorf Hotel, in room No. 316.

Motion to adjourn till the following morning at 8:30 o'clock. Motion carried.

House adjourned till 8:30 a. m., June 17, 1908.

Winston-Salem, June 17, 1908.
Wednesday, 9 a. m.,

House of Delegates met, President Way in the chair. The report of the Nominating Committee was received and adopted.

The Committee's report was presented by Dr. A. A. Kent:

The Nominating Committee, which was elected on yesterday, beg leave to submit the following as a result of its deliberation:

For President—Dr. J. F. Highsmith, Fayetteville.
For First Vice-President—Dr. C. M. Poole, Salisbury.
For Second Vice-President—Dr. D. A. Garrison, Bessemer City.
For Third Vice-President—Dr. D. A. Dees, Bayboro.

Orator.—Dr. Chas. W. Moseley, Greensboro.

Essayist.—Dr. W. L. Dunn, Asheville.

Leader of Debate.—Dr. L. B. Newell, Charlotte.

Councilor Fourth District.—Dr. E. T. Dickinson, Wilson.

Delegates to A. M. A.—Dr. J. Howell Way, Waynesville—two years; Dr. A. J. Crowell, Charlotte—two years; Dr. D. A. Stanton, High Point—one year.

Alternates.—Dr. P. J. Thomas, Wilmington; Dr. D. S. George, Marshallburg; Dr. H. H. Dodson, Greensboro.

Finance Committee.—Dr. H. S. Lott, Winston; Dr. R. E. L. Flippin, Pilot Mountain; Dr. J. M. Blair, Monroe.

Obituary Committee.—Dr. Chas. A. Julian, Thomasville; Dr. A. A. Kent, Lenoir; Dr. S. T. Nicholson, Washington.

Committee on Publication.—Dr. E. C. Register, Charlotte; Dr. W. H. Wakefield, Charlotte; Dr. D. A. Stanton, High Point.

Committee on Public Policy and Legislation.—Dr. J. F. Highsmith (ex officio Chmn.); Dr. R. H. Lewis, Raleigh; Dr. Geo. G. Thomas, Wilmington; Dr. Albert Anderson, Raleigh; Dr. D. A. Stanton, High Point (ex officio).

Committee on Scientific Work.—Dr. John Bynum, Winston; Dr. W. S. Rankin, Wake Forest; Dr. D. A. Stanton (ex officio).

Delegates to Mississippi Valley Medical Association.—Dr. W. O. Spencer, Salem; Dr. William R. Kirk, Hendersonville; Dr. M. L. Stevens, Asheville; Dr. Cyrus Thompson, Jacksonville; Dr. W. D. Pemberton, Concord; Dr. J. H. Shuford, Hickory.

Delegates to Virginia Medical Society.—Dr. J. L. Doughton, Sparta; Dr. J. J. Phillips, Selma; Dr. J. M. Williams, Warsaw; Dr. F. H. Gilreath, North Wilkesboro; Dr. S. C. Highway, Murphy.

Delegates to South Carolina Medical Society.—Dr. W. D. Witherbee, Charlotte; Dr. D. N. Dalton, Winston; Dr. J. F. McKay, Buie's Creek; Dr. A. W. Disosway, New Bern; Dr. Earl Grady, Tryon.

Next Place of Meeting.—Asheville.

Chairman Local Committee of Arrangements.—Dr. T. E. W. Brown.

Time of Meeting.—June 15th, 1909.

The report of the Nominating Committee was accepted.

J. M. Parrott moved that the Treasurer of the Society be instructed to pay on order of the Legislative Committee or Councilors, approved by the President, such expenses as may be incurred by the Committee or Councilors in the legitimate discharge of their duties. This resolution was discussed by Drs. Way, Lewis, Parrott, Manning and Flippin.

After much discussion the resolution passed.

The following amendment to the Constitution was offered by Dr. J. T. Burrus, "An amendment offered to amend Art.

VIII, sec. 3, of the Constitution, which makes it read as follows":

The officers of this Society shall be elected by ballot at a conjoint session on the morning of the third day of the annual session, a majority of votes cast being necessary to elect. No person shall be elected to any office who is not in attendance upon the annual session, and who has not been a member of this Society for the past three years. Any nominee for the office of President shall have been an active member of this Society for five years including the year of his election, shall have attended two of three meetings immediately preceding his nomination including the meeting at which he is nominated, and shall be a member in good standing at the time of his nomination.

(Signed.) Dr. J. T. Burrus.

Amendments to the Constitution offered in the House of Delegates at the Winston-Salem meeting in 1908, by A. A. Kent.

Amend Article IX, sec. 1, second line by inserting the words "by the members of the Society in the general meeting" after the words "by ballot."

Amend Article IX, sec. 3, third line by inserting the words "by the members of the Society in the general meeting" after the words "by ballot."

Amend Article XI, by inserting the words "present and voting" after the word "Society" in the seventh line.

On motion of Dr. Parrott (and same was carried) it was ordered that such members as have complied with sec. 5, Art. IV, of Constitution, be made honorary fellows.

Names reported as eligible to go on list of Honorary Fellows:

Geo. W. Long, Graham, Alamance County—Year joined, 1877.
R. H. Speight, Whitakers, Edgecombe County, 1875.
R. J. Noble, Selma, Johnston County, 1878.
W. H. Whitehead, Rocky Mount, Nash County, 1875.
D. W. Bullock, Wilmington, New Hanover County, 1875.
L. H. Hill, Germanton, Stokes County, 1877.
L. J. Picot, Raleigh, 1875.
R. H. Lewis, Raleigh, Wake County, 1877.
J. W. McGee, Raleigh, Wake County, 1865.
W. H. H. Cobb, Goldsboro, Wayne County, 1878.
I. W. Faison, Charlotte, 1878.
C. E. Moore, Wilson, 1875.
Henry Tull, Kinston, 1876.

Motion was made and carried that the resolutions of President Way relative to narcotic prescribing by physicians be published in the State papers. (See resolution.)

The House of Delegates instructed the Secretary to have a photograph of the late Dr. P. L. Murphy made and inserted in the pages of the Transactions.

Motion by Dr. Parrott that $1,000 be appropriated to be used by the Legislative Committee. This motion was discussed by Drs. Lewis, Way, and others. Motion was withdrawn with an understanding that the officers would approve proper bill for same.

There being no further business the House of Delegates adjourned *sine die*.

D. A. Stanton,
Secretary.

J. Howell Way,
President.

FORTY-SIXTH ANNUAL SESSION

OF THE

BOARD OF MEDICAL EXAMINERS

OF THE

STATE OF NORTH CAROLINA

Winston-Salem, N. C., June 10 to 18, 1908

The forty-sixth regular annual session of the Board of Medical Examiners of the State of North Carolina convened in Winston-Salem, N. C., on June 10, 1908, and remained in regular session until June 18, 1908.

The entire membership were present, including Drs. A. A. Kent, of Lenoir; G. T. Sikes, of Grissom, M. H. Fletcher, of Asheville; James M. Parrott, of Kinston; Chas. O'H. Laughinghouse, of Greenville; Frank H. Russell, of Wilmington, and J. T. J. Battle, of Greensboro.

The terms of office of the entire Board expired at this session and a new Board was elected by the State Medical Society on June 17, 1908.

In the following pages are to be noted the questions used by the Board at this examination, the applicants and various other data relative to the session.

ANATOMY.

JAMES M. PARROTT, M.D., KINSTON, N. C.

1. After the brachial artery is ligated in the upper third of the arm by what branches is the collateral circulation carried on?
2. Give the boundaries of a femoral canal.
3. Locate the fissure of Rolando (surface markings).
4. Name the contents of Scarpa's triangle.
5. At what point would you trephine for intra-cranial hemorrhage from the middle meningeal artery.
6. give the apparent (superficial) and deep origin of the 3d cranial nerve (motor oculi).
7. Mention the contents of the left lumbar region (abdomen).
8. Into what do the ends of the Eustachian tube open?

9. Describe the female urethra. (Do not give its relations or histology).

10. Describe the odontoid process of the axis and name the bone or bones with which it articulates.

N. B. Answer only 8 questions.

SURGERY.

CHAS. O'H. LAUGHINGHOUSE, M.D., GREENVILLE, N. C.

1. Surgical shock. Give Prophylaxis.
2. Hemorrhage. Give constitutional symptoms.
3. Ranula. Describe it.
4. Malignant œdema. Describe it.
5. Myxomata. Give seats of predilection.
6. Periostitis. Give diagnostic symptoms.
7. Potts fracture. How would you dress it? And why?
8. Torticollis. Give operative procedures for relief for same.
9. Hip joint disease, second stage. Give diagnostic symptoms.
10. Phlyctenuler keratitis. Treatment.

MATERIA MEDICA.

F. H. RUSSELL, M.D., WILMINGTON, N. C.

1. Name four (4) remedies most often used hypodermatically. Give doses.
2. What is a mydriatic? Name one.
3. What is an antidote? An antagonist?
4. Name the preparation of Bismuth. Give doses.
5. Give physiological action of Cinchona.
6. Name the preparations of Iodine. Give doses.
7. Name three (3) useful Emetics. Give doses.
8. Give uses of Salicylic acid.
9. Write a prescription for a tonic-laxative pill containing four (4) ingredients.
10. Write a prescription for Tertiary Syphilis, containing three (3) ingredients.

EXAMINATION ON PRACTICE OF MEDICINE.

BY M. H. FLETCHER, M.D., ASHEVILLE, N. C.

1. Give differential diagnosis between Acute General Miliary Tuberculosis and Typhoid Fever.
2. Name the most frequent complications of Pneumonia.
3. Name causes of Hematemesis.
4. Define Aphasia. Pellagra, Chlorosis.
5. Give relative frequency and etiology of Mitral Incompetency.
6. Give differential diagnosis between Gout Arthritis Deformans.
7. Give symptoms of Acute Nephritis.

8. Define Tabes Dorsalis. Give characteristic symptoms, etiology.
9. How would you distinguish Ascites from an Ovarian cyst.
10. Write one and only one Rx. for temporary relief of Migraine.

CHEMISTRY AND THE DISEASES OF CHILDREN.

G. T. SIKES, M.D., GRISSOM, N. C.

1. What is the standard of chemical comparison?
   a Give combining weight and density.
2. What are the two great divisions of chemistry?
   a Wherein is the chief difference?
3. What is Ozone?
   a Give formula.
4. What is Gun-cotton?
   a How is it made?
5. What is Carbon?
   a What is the purest form?
6. Define Measles.
   a What is period of incubation?
7. Define Mumps.
   a What are the complications?
8. Define Dysentery.
   a Give treatment.
9. What is Jaundice?
   a Give etiology.
10. Define Croup.
    a Give prognosis.

OBSTETRICS AND GYNECOLOGY.

A. A. KENT, M.D., LENOIR, N. C.

1. Name (a) the causes of ante-partum hemorrhage in pregnancy; (b) post-partum hemorrhage.

2. What are the means that may be employed to cause firm contraction of the womb after completion of the third stage of labor?

3. If the umbilical cord should become severed too close to the abdominal wall of the infant to be tied, and there should be hemorrhage from it, how would you treat it?

4. Give (a) the indications for Cæsarean section, (b) the contra-indications.

5. How would you treat dysmenorrhoea due to congenital stenosis of the cervix?

6. Name the forms of fistula that are met with in the female genital tract.

7. Name (a) the benign neoplasms of the uterus; (b) the malignant neoplasms of the uterus.

8. Under what circumstances, if any, would you (a) irrigate the abdominal cavity after an ovariotomy; (b) employ drainage after an ovariotomy?

NOTE:—Do not undertake to write all you know about the subjects named in these questions. Most of them should be answered in one to five lines each across your book, the longest may be answered in twelve lines. Do not write more than one page in answer to any one of them.

PHYSIOLOGY AND HYGIENE.

J. T. J. BATTLE, M.D., GREENSBORO.

1. Describe normal human blood.

2. Define *reserve, residual, complemental and tidal* air, give average quantity of each.

3. If Gasserian ganglion were removed, state results.

4. Describe *chyle* and how introduced into the general circulation.

5. Give the function of the *bile;* where formed; mention its two acids and two pigments.

6. Describe the factors which cause the heart sounds.

7. Describe the structure and functions of the *skin.*

8. How can malaria be eliminated from any locality.

9. How does milk, water and food become contaminated and produce typhoid fever?

10. What is a disinfectant? Mention two physiological agents, two metallic, and two nonmetallic ones.

Examination No	Name.	Address.	College of Graduation.	Year.	Average Grade.
1	J. T. Smith*	Salisbury	Col. P. & S., Atlanta	1908	
2	David E. Baird	Sagnaw	Baltimore Medical College	1906	80
3			University of Tennessee	1905	60 13/14
4	Walter P. Wilson	Pine Hall	N. C. Medical College	1908	80
5			University of the South	1901	75 2-7
6			N. C. Medical College	1907	77 1-2
7	Arthur B. Burns*	Statesville	Atlanta School of Medicine	1908	
8	J. Marion Matkins*	McIver	University of Tennessee	1908	
9	F. A. Shepard	Liberty	University of Tennessee	1908	
10			University of Nashville	1908	70 3-4
11	H. T. Frazer	Asheville	Col. P. & S., New York		84 6-7
12	Philip Norris	Rutherfordton	University of Pennsylvania		87 1-2
13	A. M. D. Whitley	Monroe, R. F. D. 1	Baltimore Medical College	1908	82 3/14
14			Baltimore Medical College	1908	77
15	Jesse A. Powell	Harrellsville	Col. P. & S., Baltimore	1907	89 1/14
16	John Kerr Pepper	Kernersville	Col. P. & S., Baltimore	1907	89 1-2
17	H. A. Wakefield	Charlotte	N. C. Medical College	1908	82 1-7
18	Frank L. Mock	Winston-Salem	N. C. Medical College	1908	82 9/14
19			N. C. Medical College	1908	77
20	Arther O. Spoon	Haw River	University of Maryland	1908	82 4-7
21	David Watson Harris	Fayetteville	University of North Carolina	1908	87 9/14
22	C. F. Winslow	Hobbsville	University of Maryland	1908	87 5/14
23	S. R. Edwards	Siler City	University of Maryland	1908	83 13/14
24	Thom. Malcom Bizzell	Goldsboro	University of Maryland	1908	85 13/14
25	Robt. Gray McPherson	Snow Camp	University of North Carolina	1908	86 5-7
26	Allen McLean	Laurinburg	University of Maryland	1908	86 6-7

27	Julian Decatur Maynard	Chapel Hill	University of North Carolina	1908	87 9/14
28	Saint Elmo McCotter*	Bayboro	P. & S., Atlanta	1908	
29	Evander McNair McIver	Jonesboro	University of North Carolina	1908	91 1-7
30	Jas. E. Mann	Lake Landing	University of Maryland	1907	80 1-7
31			University of North Carolina	1908	77 1-7
32	Austin Flint Nichols	Roxboro	University of North Carolina	1908	90 5/14
33	A. J. Ferrell	Old Fort	University of North Carolina	1908	93 1-7
34	Hamer Carson Irwin	Roanoke Rapids	University of Maryland	1905	85
35	E. J. S. Scofield	Wappingers Falls, N. Y.	University of North Carolina	1908	88 3-4
36	Argo Hilliard Perry	Raleigh, R. F. D.	Maryland Medical College	1907	80
37	Platt Walker Covington	Wadesboro	University of Maryland	1908	84 3/14
38	Wm. Tilson Woodward	Democrat	University of North Carolina	1907	84 11/14
39	Samplet E. Webb	Brown Summit	University of North Carolina	1908	84 11/14
40			University of Maryland	1907	75 2-7
41	Cecil Garrenton	Coinjock	Medical College of Virginia	1908	91 1-7
42	Geo. Floyd Ross	Philadelphia, Pa.	University of Pennsylvania	1907	86 5-7
43			University College of Medicine	1907	76 2-7
44	Wm. Walter Stafford	Elizabeth City	University College of Medicine	1908	87
45	C. R. Young	Angier	University College of Medicine	1908	87 4-7
46	Adin Adain Rucker	Rutherfordton	University of Maryland	1908	89 11/14
47	Wm. Royal Engel	Tryon	Jefferson Medical College	1906	87 2-7
48	Chas. Manly Walters	Burlington	University of Maryland	1908	82 9/14
49	John Blois Watson	Raleigh	University of North Carolina	1908	88 2-7
50	Wm. Nelson Mebane	Hillsboro	George Washington University	1906	89 13/14
51	Chas. Solomon Lawrence	Mt Airy	George Washington University	1908	93 1/14
52	Wilbur B. Robertson	Burnsville	Baltimore Medical College	1908	88
53	Robt. M. Potts	Fort Mill, R. F. D. 3, S. C.	University of Maryland	1896	80 6-7
54	Thomas Morris Chaney	Old Fort	University of Maryland	1906	90 11/14
55	Robt. T. Upchurch	Apex	Jefferson Medical College	1908	91
56	Jas. Thomas Taylor	Raleigh	University of Maryland	1908	90 13/14
57	Fred Jas. Pate	Gibson	University of Maryland	1908	87 3-7
58	Edgar W. Lassiter	Rich Square	University College of Medicine	1908	83 3-7
59					79
60	John D. Kerr, Jr.	Clinton	University of Maryland	1908	88 4-7
61	Thomas Hays Royster	Oxford	University College of Medicine	1998	87 6-7

Examination No.	Name.	Address.	College of Graduation.	Year.	Average Grade.
62	Paul P. Lane	Wilson	University of Maryland	1908	82 6-7
63	Chas. P. Bolles, Jr.	Wilmington	University of Virginia	1897	90 3-7
64			Maryland Medical College	1908	75 5-7
65	John Calvin Rich	Delwood	University of Nashville	1908	80
66			Chattanooga Medical College	1908	76 9/14
67			University Col. of Medicine, Richmond	1899	
68	John W. McConnell	MacConnellsville, S. C.	University of Medicine	1907	93 1-7
69	Lewis Hector Schubert	Enfield	Tennessee Medical College	1908	83 5-7
70			P. & S., Baltimore	1908	77 6-7
71	Ralph E. Dees	Grantsboro	University of Maryland	1906	89 2-7
72	Frank Theo. Page, colored	Durham	Leonard Medical College	1908	80 4-7
73	Edgar Stegall Portis, colored	Louisburg	Leonard Medical College	1908	87 1-2
74	Frank Johnson Thornton, colored	Raleigh	Leonard Medical College	1908	80
75	Alex. Hamilton Ray, colored	Raleigh	Leonard Medical College	1908	86 13/14
76	John Robert Henry, colored	Barefoot	Leonard Medical College	1908	92 5/14
77	Wm. Arthur Mitchiner, colored	Raleigh	Leonard Medical College	1908	85 9/14
78			Leonard Medical College	1905	65 1-2
79	Edward R. Carter, colored	Winston	Leonard Medical College	1908	83 3-4
80			Leonard Medical College	1908	72 9/14
81	Frank W. Avent, colored	New Bern	Leonard Medical College	1908	91 2-7
82	Nathan Henry Styron, Jr., colored	New Bern	Leonard Medical College	1908	83 5-7
83	Geo. Lee Winstead, colored	Rocky Mount	Leonard Medical College	1908	83 4-7
84			Leonard Medical College	1908	80
85	Mathew N. L. Perry, colored	Fayetteville	Leonard Medical College	1908	82 5/14
86			Leonard Medical College	1908	78 13/14
87			Knoxville Medical College	1908	69 13/14

88	Wm. Green Torrence, colored	Asheville	Dearborn Medical College	1907	80 1-7
89			Meharry Medical College	1905	66
90	Herbert Jones Erwin	Morganton	Leonard Medical College	1908	80 1-7
91	Chas. S. Fisher, colored	Raleigh	Leonard Medical College	1908	87
92			University of New York	1879	66 3/14
93	Irene Thornton	Fayetteville	Woman's Medical College	1908	90 5-7
94	John S. McKee	Raleigh	University of Maryland	1907	87 5-7
95	John Berry	Chapel Hill	Jefferson Medical College	1908	91 1-2
96	Penlie B. Ledbetter	Pisgah Forest	Jefferson Medical College	1908	84 1-7
97	Jas. Wm. Reid	Lowell	Jefferson Medical College	1908	88
98	Thomas Harley Smith	Liberty	Jefferson Medical College	1908	91 6-7
99	Solon Arthur Dodds	Salisbury	Johns Hopkins Medical College	1905	91 1/14
100	John McNeil Smith	Laurinburg	Jefferson Medical Collegee	1908	89 5-7
101	Vernon Albert Ward	Wilson	Jefferson Medical College	1908	90 13/14
102	Lawrence S. Mitchell, colored	Ahoskie	Leonard Medical College	1908	84 9/14
103	V. J Brown*	Ogden	Tennessee Medical College	1905	
104			University of Tennessee	1904	64 2-7
105	Wm. R. Wellborn	Coleridge	N. C. Medical College	1905	84 3-7
106			University of Tennessee	1907	74 3-7
107	Henry Embra McMurray	Sharon, S. C.	N. C. Medical College	1908	88 3/14
108			N. C. Medical College	1908	75
109			University of Nashville	1908	68 2-7
110	Garrett Dewy Gardner	Ivy	Tennessee Medical College	1908	84 3/14
111	Wm. Joseph Hunnicutt	Asheville	University of Tennessee	1895	80 9/14
112	Chas. E. Wilkerson	Greensboro	University of Nashville	1907	84
113	John Orville Hooper*	Fletcher	University of Nashville	1908	
114			N. C. Medical College	1905	66 13/14
115	Edwin M. Harrison*	Wake Forest			
116	Wm. Daniel James	Laurinburg	Jefferson Medical College	1908	90 5/14
117	Wm. Wills Green	Franklinton	University of North Carolina	1908	90 11/14
118	Thurman D. Kitchin	Scotland Neck	Jefferson Medical College	1908	93 1-7
119	Wingate Memory Johnson	Raleigh	Jefferson Medical College	1908	92 13/14
120	Richard E. Timberlake	Youngsville	Jefferson Medical College	1908	90 1/14
121	Robt. Herman Freeman	Wake Forest	Jefferson Medical College	1908	84 1/14
122	Geo. Monroe Monk	Raleigh	University of North Carolina	1908	80 4-7

1908 RECORD OF THE BOARD—CONTINUED.

Examination No.	Name.	Address.	College of Gradnation.	Year.	Average Grade.
123	H. T. Smith	Anna	Medical College of Virginia	1908	91 5-7
124	B. O. Choate	Sparta	Medical College of Virginia	1908	86 1/14
125	W. C. Mudget	Southern Pines	Maryland Medical College	1903	82
126	Withdrew.				
127	S. G. Jett	Reidsville	University of the South	1903	85 5-7
128	Ransom Lee Carr*	Wallace	Baltimore Medical College	1907	
129					71 1-7
130	Helen W. Bissell*	Alleghany	Woman's Medical, New York	1879	
131			P. & S., Atlanta	1900	64 1-7
132	John Wm. Baird	Mars Hill	Tennessee Medical College	1991	81 3-7

*Reciprocity.

One hundred and thirty-two applicants appeared before the board. Ninety-three successfully passed the examinations and were duly licensed. Ten were granted license through reciprocity. Twenty-nine applicants were rejected.

Three successful applicants tied for the honors of making the highest grade—that of each being 95 1-7. Their names are: A. J. Terrell, Old Fort, N. C.; John Wilson McConnell, McConnellsville, S. C.; Thurman D. Kitchin, Scotland Neck, N. C.

The next highest grade was 93¼, made by Charles Solomon Lawrence, Mount Airy, N. C.

The names of the successful applicants are as follows:

Baird, Jno. M., Mars Hill.
Baird, David E., Sagno.
Berry, John, Chapel Hill.
Bizzell, Thos. M., Goldsboro.
Bolles, Chas. P., Wilmington.
Chaney, Thomas M., Old Fort.
Covington, Platt W., Wadesboro.
Dees, Ralph E., Grantsboro.
Dodds, S. A., Salisbury.
Edwards, Slocumb R., Siler City.
Engel, William R., Tryon.
Frazier, H. T., Asheville.
Freeman, Robert H., Wake Forest.
Gardner, Garrett D., Ivey.
Garrenton, Cecil, Coinjock.
Green, William W., Franklinton.
Harris, D. W., Fayetteville.
Hunnicutt, William J., Asheville.
Irwin, Ham. C., Roanoke Rapids.
James, W. D., Laurinburg.
Jett, S. G., Reidsville.
Johnson, Wingate M., Raleigh.
Kerr, John D., Jr., Clinton.
Kitchin, Thurman D., Scotland Neck.
Lane, P. P., Wilson.
Lassiter, Ed. W., Rich Square.
Lawrence, Charles S., Mount Airy.
Ledbetter, P. B., Pisgah Forest.
McConnell, John W., McConnellsville, S. C.
McIver, E. McN., Jonesboro.
McKee, John S., Raleigh.

McLean, Allen, Laurinburg.
McMurray, H. E., Sharon, S. C.
McPherson, R. G., Snow Camp.
Mann, J. E., Lake Landing.
Maynard, William N., Hillsboro.
Mock, F. L., Winston-Salem.
Monk, Geo. M., Raleigh.
Mudgett, W. C., Southern Pines.
Nichols, A. F., Roseboro.
Pate, Fred. J., Gibson.
Pepper, John C., Kernersville.
Perry, A. H., Raleigh.
Potts, Robert M., Fort Mill, S. C.
Powell, J. A., Harrellsville.
Reid, Jas. W., Lowell.
Ritch, John C., Belwood.
Robertson, William R., Burnsville.
Ross, George F., Philadelphia.
Royster, Thomas H., Oxford.
Rucher, A. A., Rutherfordton.
Scofield, E. J. S., Wapperings Falls, N. Y.
Shoate, B. O., Sparta.
Shubert, L. H., Enfield.
Smith, John M., Louisburg.
Smith, P. T., Anna.
Smith, T. H., Liberty.
Spoon, A. O., Haw River.
Stafford, W. W., Elizabeth.
Taylor, James T., Raleigh.
Terrell, A. J., Old Fort.
Thornton, Miss Irene, Fayetteville.
Timberlake, Richard E., Youngsville.
Upchurch, R. T., Apex.
Wakefield, H. A., Charlotte.
Walters, Charles M., Burlington.
Ward, V. A., Wilson.
Watson, John B., Raleigh.
Webb, S. E., Browns Summit.
Wellborn, William R., Cold Ridge.
Whitney, L. M. D., Monroe.
Wilkinson, Charles E., Greensboro.
Wilson, W. P., Pine Hall.
Winslow, William T., Democrat.
Young, C. R., Angier.

COLORED.

Avent, Frank, New Bern.
Carter, Ed. R., Winston.

Erwin, H. J., Morganton.
Fisher, Charles E., Raleigh.
Henry, John Robert, Beaufort.
Mitchell, L. L., Ahoskie.
Mitchener, William A., Raleigh.
Page, F. T., Durham.
Perry, M. N. L., Fayetteville.
Portis, E. S., Louisburg.
Ray, A. H., Raleigh.
Styron, N. H., Jr., New Bern.
Thornton, F. J., Jr., Raleigh.
Torrence, William G., Asheville.
Winston, George L., Rocky Mount.

The following were granted license under the reciprocity clause:

Bissell, Helen W., Allegheny.
Brown, V. J., Ogden.
Burns, A. B., Statesville.
Carr, R. L., Wallace.
Harrison, E. H., Wake Forest.
Hooper, J. O., Fletcher.
McCotter, St. Elmore, Mayboro.
Shepherd, F. A., Liberty.
Smith, J. T., Salisbury.
Watkins, M. J., McIver.

On the conclusion of the duties of this session the labors and responsibilities were placed upon the worthy shoulders of a new board, elected by the State Medical Society on June 17, 1908. This board met and organized as will be noted on the following pages.

With appreciation of the honors enjoyed.

Respectfully submitted, for the board,

G. T. Sikes, *Sec.-Treas.* A. A. Kent, *President.*

Minutes of the Newly Elected Board of Medical Examiners at Winston-Salem, N. C., June 18, 1908

The State Board of Medical Examiners, elected to serve during the next six years (1908-1914), have met and organized with the following results:

Dr. Jno. C. Rodman, Washington, President, Chemistry and Diseases of Children.
Dr. Lewis B. McBrayer, Asheville, Surgery.
Dr. Wm. W. McKenzie, Salisbury, Anatomy and Histology.
Dr. John Bynum, Winston-Salem, Obstetrics and Gynecology.
Dr. J. L. Nicholson, Richlands, Physiology and Hygiene.
Dr. H. H. Dodson, Greensboro, Practice of Medicine.
Dr. Benj. K. Hays, Oxford, Secretary-Treasurer, Materia Medica.

"Requisitions for Reciprocity" were adopted by the board.

The next session ordered to be held at Asheville, N. C., June 9, 1909.

B. K. Hays, *Secretary-Treasurer.*

Jno. C. Rodman, *President.*

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

J. C. RODMAN, M.D., PRESIDENT, WASHINGTON.
BENJ. K. HAYS, M.D., SEC.-TREAS., OXFORD.

J. C. Rodman, M.D., Washington, Chemistry and Diseases of Children.
L. B. McBrayer, M.D., Asheville, Surgery.
W. W. McKenzie, M.D., Salisbury, Anatomy and Pathology.
H. H. Dodson, M.D., Greensboro, Practice of Medicine.
John Bynum, M.D., Winston-Salem, Obstetrics and Gynecology.
J. L. Nicholson, M.D., Richlands, Physiology and Hygiene.
Benj. K. Hays, M.D., Oxford, Materia Medica and Therapeutics.

The next annual meeting will be held at Asheville, June 9, 1909.

MEDICAL LICENSE.

An applicant for license to practice medicine in North Carolina must appear before the Board of Medical Examiners in regular session and present a certificate of good moral character, attested by two persons

known to the board, a diploma from a medical college in good standing or a license from some other State, and must deposit ten dollars with the Secretary of the board. He will then be examined upon the following branches of medicine: Anatomy, Physiology, surgery, Pathology, Medical Hygiene, Chemistry, Pharmacy, Materia Medica, Therapeutics, Obstetrics and the practice of medicine.

He must make an average of eighty per cent upon all the branches, and he must not fall below thirty-five per cent upon any one branch.

TEMPORARY LICENSE.

An applicant for temporary license must appear before two members of the Board of Medical Examiners and present a certificate of good moral character, a diploma from a medical college in good standing, and must pay a fee of five dollars. He must then stand a satisfactory oral examination.

A temporary license continues in force only until the next regular meeting of the board, and is never granted but once to the same applicant.

REQUISITION FOR RECIPROCITY.

1. The applicant must have a diploma from a medical college requiring a three years course of study for such degree.
2. He must have license from a State Board of Examiners requiring the same per cent as this State, which is 80.
3. He must present a sworn affidavit from two practicing physicians as to his professional standing in his community, the burden of proof resting upon the applicant.
4. He shall attend the meeting of the board at the time of application and make the same in person.
5. He shall pay a fee of ten dollars for such license.
6. He must not have failed before the North Carolina Board.
7. He must have been in actual practice for five years in the State from which he comes.

LAWS OF NORTH CAROLINA RELATIVE TO THE PRACTICE OF MEDICINE.

(Revisal of 1905.)

Sec. 4494—*Board of Examiners to elect officers*—The Board of Medical Examiners are authorized to elect all such officers, and to frame all such by-lays as may be necessary, and in the event of any vacancy by death, resignation or otherwise, of any member of said board, the board, or a quorum thereof, is empowered to fill such vacancy.

Sec. 4495.—*Board of Examiners, Meetings of*—The Board of Medical Examiners shall assemble at the same time and place when and where the Medical Society assembles, which Society shall assemble at least

once in every year at such time and place as the said Society at its next preceding meeting shall have fixed; and the said board shall remain in session from day to day until all applicants who may present themselves for examination within the first five days after its meeting shall have been examined and disposed of: Provided, that the board may at its discretion, meet not more than one week before the said Society, but always in the same place; and that one additional meeting in each year may be held at some suitable point in the State, if deemed advisable.

Sec. 4498.—*Applicants for License Examined.*—It shall be the duty of the said board to examine all applicants who shall exhibit a diploma, or furnish satisfactory proof of graduation from a medical college in good standing requiring an attendance of not less than three years, and supplying such facilities for clinical instruction as shall meet the approval of the said board, for license to practice medicine or surgery, or any of the branches thereof, on the following branches of medical science: Anatomy, Physiology, Surgery, Pathology, Medical Hygiene, Chemistry, Pharmacy, Materia Medica, Therapeutics, Obstetrics and the practice of medicine, and if on such examination they be found competent, to grant to each applicant a license or diploma, authorizing him to practice medicine and surgery, or any of the branches thereof. Five members of the board shall constitute a quorum and four of those present shall be agreed as to the qualification of the applicant: Provided, that the requirement of three years' attendance at school shall not apply to those graduating prior to January first, nineteen hundred: Provided further, that license or other satisfactory evidence of standing as a legal practitioner in another State shall be accepted in lieu of a diploma and entitle to examination.

CHAPTER 890 PUBLIC LAWS OF NORTH CAROLINA

AN ACT TO AMEND SECTION 4498 OF THE REVISAL OF 1905, BY ADDING A SUBSECTION MARKED (A) THERETO FOR ENLARGING THE POWERS OF THE BOARD OF MEDICAL EXAMINERS IN GRANTING LICENSE TO APPLICANTS TO PRACTICE MEDICINE.

The General Assembly of North Carolina do Enact:

Sec. 1. That section four thousand four hundred and ninety-eight of The Revisal of one thousand nine hundred and five be amended by adding a subsection marked (a): "That the Board of Medical Examiners shall in their discretion issue a license to any applicant to practice medicine and surgery in this State without examination if said applicant exhibits a diploma or satisfactory proof of graduation from a medical college in good standing requiring an attendance of not less than three years and a license issued to him to practice medicine and surgery by the Board of Medical Examiners of another State."

Sec. 2. This Act shall be in force and effect from and after its ratification.

In the General Assembly read three times and ratified, this the 11th day of March, A. D., 1907.

(*Revisal of 1905.*)

Sec. 4499.—*Temporary License.*—To prevent delay and inconvenience, two members of the Board of Medical Examiners may grant a temporary license to any applicant who may comply with the requirements as to graduation prescribed in the preceding section, and make report thereof to the next regular meeting of the board: Provided, such temporary license shall not continue in force longer than the next regular meeting of the board, and such temporary license shall in no case be granted after the applicant has been refused a license by the Board of Medical Examiners.

Sec. 4501.—*License Fee.*—The board shall have power to demand of every applicant thus licensed the sum of ten dollars before issuing a license or diploma, and the sum of five dollars for each temporary license, to be paid to the Secretary of the board.

Sec. 4503.—*Board May Rescind License.*—The said board shall have the power to rescind any license granted by them when upon satisfactory proof it shall appear that any physician thus licensed has been guilty of grossly immoral conduct.

The North Carolina Association for the Prevention of Tuberculosis--Third Annual Session Held in Winston, N. C., at Noon, Thursday, June 18, 1908.

At 12 o'clock Dr. C. A. Julian, Vice-President, called that body to order in the lobby of the Hotel Zinzendorf, Winston-Salem, N. C.

Dr. W. L. Dunn, of Asheville, N. C., was elected President; Dr. John Roy Williams, of Greensboro, N. C., was elected Vice-President; Dr. C. A. Julian, of Thomasville, N. C., was elected Secretary and Treasurer.

The following members of the Association were present at the meeting:

Drs. L. B. Morse, John L. Williams, W. C. Bronson, H. C. Weaver, W. L. Dunn, H. T. Bahnson, J. Howell Way, C. A. Julian, Richard H. Lewis, Wm. M. Jones, Isaac M. Taylor, J. F. Highsmith, Hon. Clement Manly, Drs. Wm. Bolton, P. E. McFayden, E. M. Summerel, D. A. Dees, A. W. Knox, J. B. Smith, J. A. Turner, J. R. Reitzel, Chas. R. Wharton, E. C. Laird, W. P. Whittington, J. C. Grady, H. H. Briggs, W. S. Rankin, A. B. Croom, J. L. Hanes, J. P. Turner, F. O. Rogers, C. F. Harper, H. H. Dodson, J. Allison Hodges, L. B. McBrayer, Philip Morris, A. L. Flanders, Francis Duffy, R. G. Buckner, J. W. Long, A. A. Kent, W. P. Beall, J. T. Burrus, G. E. Jordan, C. A. Andrews, W. P. Reeves, J. M. Reece, H. A. Barnes and D. A. Stanton.

The Association was organized May 30, 1906, by the committee appointed by the President of the North Carolina Medical Society, under resolution offered at the 1905 session. The purpose of the Association as stated in Article II of the Constitution of the Association is the Prevention of Tuberculosis:

a. By the study of the disease in all of its forms and relations.

b. By the dissemination of knowledge concerning its cause, prevention and treatment, and by supplementing the work of the State Board of Health in this cause.

c. By such other means as may from time to time be deemed advisable.

This Association is bending all energies to stimulate a wide interest in this most important branch of preventive medicine.

A number of gentlemen spoke of the work that the Association should undertake, and plans were advanced for making the Association one of the most effective working bodies in the State.

On motion of Dr. Richard H. Lewis, of Raleigh, all members present were elected delegates to the International Congress on Tuberculosis at the meeting in Washington, D. C., September 21st to October 12th.

On motion of Dr. W. L. Dunn, Drs. Chas. Minor, S. W. Battle, M. L. Stevens, Paul Ringer, of Asheville; Drs. Thos. A. Mann, of Durham; Wm. R. Kirk, Hendersonville; D. A. Dees, Bayboro, were elected delegates to the International Congress on Tuberculosis.

We have passed the stage of experiment, and each meeting in the future should show a respectable array of measures successfully carried out and the broadening of our sphere of influence for good.

The Association adjourned to meet upon call of the officers.

CHAS. A. JULIAN, M.D.,
Secretary.

The North Carolina Board of Health

G. G. Thomas, M.D., *President*.....Wilmington.
Thomas E. Anderson, M.D.....Statesville.
J. Howell Way, M.D.....Waynesville.
W. O. Spencer, M.D.....Winston-Salem.
Edward C. Register, M.D.....Charlotte.
David T. Tayloe, M.D.....Washington.
J. A. Burroughs, M.D.....Asheville.
J. L. Ludlow, C.E.....Winston-Salem.
Richard H. Lewis, M.D., *Secretary and Treasurer*.....Raleigh.

ANNUAL MEETING, JUNE, 1908

The annual meeting of the Board was held at the Zinzendorf Hotel, Winston-Salem, on the evening of June 16th, all the members except one being present. Dr. Thomas E. Anderson was elected a member of the State Board of Embalming, to succeed Dr. Edward C. Register, whose term expired and who declined a reelection.

Dr. Shore, Director of the State Laboratory of Hygiene, was present by invitation. After consultation with him the Board ordered the inauguration as soon as possible of the prophylactic treatment of hydrophobia, in accordance with the act of the last Legislature.* The employment of an assistant bacteriologist was authorized.

On the following day (Wednesday) the conjoint session with the State Medical Society was held. The attendance was good and the interest in the proceedings manifest. Dr. Stiles, of the United States Public Health Service, upon our invitation, read a very interesting and valuable paper on "The Medical Influence of the Negro in Connection with Anemia in the White." Also, upon our invitation, Dr. Tait Butler, State Veterinarian, read a paper on "Milk Supplies in Relation to the Public Health." This was extremely practical and useful, and, supplemented by additional remarks in the doctor's earnest and vivacious style, evidently made an impression.

*Pursuant to instructions of the Board, the treatment was begun in the laboratory at Raleigh on July 1, 1908.

Annual Report of the Secretary of the North Carolina Board of Health.

R. H. LEWIS, M.D.

May 20, 1907—May 20, 1908.

The health conditions of our State during the past year have been marked by nothing out of the common run, and the work of your Secretary has been chiefly routine. There have been some small epidemics of typhoid fever and an investigation by the board was requested by County Superintendent of Health Evans of one in Councils, in Bladen County, and by Mayor Montgomery of Reidsville of an outbreak in that town. The former was investigated by President Thomas and the latter by Engineer Ludlow. Their respective reports are appended.

Tuberculosis has lost nothing in importance or interest. Our distribution of literature on the subject has, I believe, borne fruit in the education of the people as to the best methods of preventing its spread. In August last, at the request of the authorities, a committee of the board visited the State Hospital at Morganton and advised with the management as to the location of special quarters for tuberculous patients. Their report is appended.

Although not under the control of the Board of Health its Secretary is, *ex officio*, a member of the Board of Directors of the State Sanatorium for Tuberculosis and a review of the health conditions of the State would not be complete without reference to it. Its establishment was authorized by the last Legislature, but it has been unavoidably delayed by the inability to secure a site suitable to the permanent establishment of so important an undertaking. Fortunately the necessary abandonment of one or more locations fixed upon, owing to the inability to secure a sound title, finally resulted in the selection and purchase of as nearly an ideal site as can be well imagined. Situated in the sand hills of Cumberland County about eight miles from Aberdeen, it is traversed by the Aberdeen and Rockfish Railroad, and is, therefore, easy of access. The purchase contains about nine hundred acres and at its highest point, which has been selected for the location of the building, overlooks a wide panoramic view of at least three-fourths of a circle of miles upon miles of rolling pine forest. Work has been begun on the buildings and it is hoped that patients can be received in the early fall, I am told by Dr. Brooks, the Superintendent.

The International Congress on Tuberculosis, which is to meet in Washington, September 21st to October 12th is an event of world-wide interest and will well repay a visit. I hope that many of our health officers and physicians will attend.

Smallpox has been slightly more prevalent than during the preceding year, the record being 2011 cases with 8 deaths against 1968 cases and 6 deaths in 1906-07. During the past year the disease has been much more prevalent among the whites than among the negroes, which is just the reverse of the year before. To state it accurately: In

1906-07 there were 620 white cases with 2 deaths and 1348 colored cases with 4 deaths; while during the past year there were 1168 white cases with six deaths and 843 colored cases with 2 deaths. The number of counties infected was just the same in each year, 48. Owing to its continued mildness and the fact that it has become such an old story, just ten years old, it produced little concern and practically no interference with business. The following is a tabulated statement by counties:

SMALL-POX REPORT.

Counties.	Number of Cases.			Number of Deaths.		
	White.	Colored.	Total.	White.	Colored.	Total.
Alamance*	75	60	135			
Alleghany	6		6			
Beaufort	2	5	7			
Bertie	6		6			
Buncombe		3	3			
Burke	4		1			
Cabarrus	89	22	111			
Catawba	1		1			
Chatham	20	3	23			
Chowan	100	100	200		1	1
Cleveland	8		8			
Columbus	2	1	3			
Cumberland	1		1			
Currituck	32	17	49			
Davidson	7		7			
Davie		55	55			
Durham	1	1	2			
Edgecombe*	12		12			
Forsyth	14	192	206			
Gaston	6		6			
Gates		5	5			
Guilford	109	72	181	2		2
Halifax		1	1			
Harnett	9	4	13			
Iredell	10		10			
Jackson*	75		75			
Johnston	150	75	225	1		1
McDowell	3		3			
Madison	37		37			
Mecklenburg	16	5	21			
Mitchell	40		40			
New Hanover	9	19	28			
Nash	2		2			
Orange	5	25	30			
Paquotank		2	2			
Pender*	3		3			
Randolph	14		14			
Robeson	4		4			
Rockingham	3	59	62			
Rowan	48	45	93			
Rutherford	11	5	16			
Sampson	2	1	3			
Wake	29	51	80			
Warren		6	6			
Watauga	20		20		1	1
Wayne	35	4	39	1		1
Wilkes*	125	5	130	2		2
Wilson	3		3			
Yadkin	20		20			
Total in forty-eight counties	1,168	843	2,011	6	2	8
Death rate per cent.				0.5	0.2	0.39

* Estimated.

In compliance with the instructions of the board I have prepared a new and up to date edition of Instructions for Quarantine Disinfection, and it will be mailed to all the physicians of the State as soon as I can get a complete and accurate list of them. This work is now in progress.

The chief and most important work of the year has been the reorganization and refitting of the State Laboratory of Hygiene, which, while a separate entity, is placed by the law under the control of the State Board of Health. Upon the retirement of Dr. McCarthy we were fortunate in securing as Director of the Laboratory a man well educated academically and well trained technically, an M.S. of our own University and an M.D. of Johns Hopkins, with a biological laboratory experience of nearly ten years, Dr. C. A. Shore, who, by the way, is a citizen of this goodly town. We have been likewise no less fortunate in securing as chemist Miss Daisy B. Allen, who, I am assured by Dr. Herty, Professor of Chemistry at the University, has never been excelled, if equaled, by any graduate of that department during his incumbency. Thanks to the generosity of the Legislature we were enabled to thoroughly refit the laboratory with the most approved apparatus and first-class work can be expected.

Those who have read the Monthly Bulletin regularly will remember that the last General Assembly authorized the preventive treatment of hydrophobia by the director of the laboratory when the Board of Health should think it wise to undertake it, provided the funds at their disposal should justify it without interfering with the regular work. With the two thousand dollars annually appropriated by the last Legislature, in addition to the tax on public water companies, I believe this could now be done to the great relief of many of our poorer citizens unable to afford the expensive treatment of the various Pasteur institutes. This however, would necessitate the employment of a competent assistant, as the director, even now, has all his time occupied in the general work, but we can now afford it and we recommend it. The report of the director of the laboratory accompanies this. As the laboratory is intended for the benefit of the people, through the medical profession, it is hoped that the physicians will freely avail themselves of its help.

(See index for other proceedings, discussions etc., of "Conjoint Session.") EDITOR.

Report of the Obituary Committee North Carolina Medical Society, June 17, 1908

COMMITTEE:

CHARLES A. JULIAN, M.D., Thomasville.
BENJ. K. HAYS, M.D., Oxford.
ROBT. L. GIBBON, M.D., Charlotte.

IN MEMORIAM

PATRICK LIVINGSTON MURPHY.
JOSEPH GRAHAM.
THOMAS DEVEREAUX HAIGH.
LAWRENCE EDWARD HOLMES.
ROBERT H. HOLLIDAY.
J. F. BEALL.
J. D. McMILLAN.
ELIAS KERNER.
RANDOLPH VAMPIL.
R. G. WASHBURN.
C. L. BRYAN.
M. W. HARPER.
S. B. KENNEDY.
H. A. McSWAIN.
ROBERT ROBERSON.
C. H. LEWIS.
J. J. MANN.
JOHN D. SPICER.
JASPER LEE BEAM.
JAMES HERBERT REYNOLDS.
WILLIAM T. HOWARD.
W. R. CAPEHART.

"There is no death! An angel form
Walks o'er the earth with silent tread;
He bears our best beloved away,
And then we call them dead.

Ah! ever near us, though unseen,
The dear immortal spirits tread;
For all the boundless universe
Is life! There is no death!"

Necrology.

PATRICK LIVINGSTON MURPHY: AN APPRECIATION.

BY GEORGE GILLETT THOMAS, M.D., WILMINGTON, N. C.

In all the history of this organization, made and nourished by the thought and care of the medical men of our State, there has come into its fold no better, purer, or more unselfish man than Patrick Livingston Murphy. Born in North Carolina, reared among his people, proud of his ancestry and its connection with the many changes that have brought the State to its present high position, he inherited and worthily cultivated the very best traits of character of those of his people whose lives were spent in the interest of good citizenship. He was naturally a man of retiring nature, and yet so thoroughly did he enter into the intimate details of whatever he felt was a part of his life's duty, that when the occasion arose for him to begin the prosecution of schemes for the betterment of conditions that appealed to his position in the life of the State, he was ready to do his full part and to defend with intelligence and zeal the policies and methods, which he adopted, or to which he gave his influence. A marked characteristic of Dr. Murphy was fixedness of purpose. He seemed never in haste to determine what was right, or to find it necessary to alter the course of action which he had adopted. This mental trait, shall we not say this great mental development was the source of his eminent success, and should be the reason why we, who join our sorrows in this memorial service, shall consider his life among us with profit for its example, and be aroused to a justifiable desire to emulate his great virtue. His whole life was so full of the work of an honest man to whom God had given a great mind, that it is a simple story, shortly told, to set out what he has done. Only those who thoroughly master all the details of whatsoever they undertake are simple in their methods, or direct in the prosecution of their schemes. These two elements of greatness were fully combined in Dr. Murphy. No man in our memory has builded for himself a memorial more lasting than he. To you all he was well known as a wise counselor, a man of excellent judgment, and a person who was infrequently heard in the discussions of this Society, but whenever the occasion arose for him to take part in the settling of policies, or in discussing the merits of questions presented to this body, he was accorded, as he deserved, a willing hearing, as he always presented a persuasive argument; it was simple, it was clear, it was founded upon good judgment, and it was convincing.

He entered upon his duties as Superintendent of the Western Hospital for the Insane when the buildings were just finished, when, in fact, they were only so far finished that he could enter them and begin to organize the forces that were to make eventually this institution one

Devotedly
P. L. Murphy

of the models of its kind in all this broad land; when the land surrounding the buildings was in its original wild and disordered shape, and with all the evidences of the workman's labor still scattered over the premises, and with hardly an approach to the grounds that was worthy of the name of a road. Beginning thus, he labored with unchanging policy to make his life's work a success, to show what was possible for an honest man, pursuing honest labor and the highest purposes, to accomplish. Almost a stranger in his new home, there were few to whom he could appeal for advice, and he began at once to rely upon himself more than he had ever done before in the determination of the many vexing questions that were presented to him from the beginning up to the day his great life ended. Painstaking care was the keystone of his success, and no detail in the workings of the great hospital passed by him without his notice and his earnest consideration. He early saw and determined the possibility of making this hospital peculiarly a State institution in every sense, and to this end his employees almost without exception were from the first and throughout his life from the people of the State, in many instances from the immediate neighborhood. These, enthused by his example and led by his intelligent care, have done their work faithfully and zealously, and are now as eager as the superintendent was to accomplish for the State's wards, the unfortunate insane, all that can be done for their comfort and cure. Many of these, his original employees, were among that household which followed his body to the grave, sorrowing as those only sorrow who have lost a friend. It was his influence that led them, and his mind that guided them. They were sure of his commendation for duty well done, and equally sure of his disapproval of duty neglected, as well as his sympathy when it was needed or deserved. In my intercourse with him and thank God it was a long and loving friendship, there was no evidence of wavering of purpose. With a previous training of some length in other hospitals for the insane, he came to his work with the confident belief that as insanity was a disease, it should be treated in such a way that the sufferers, the inmates of his institution, would be placed upon a footing that would approach the treatment of mentally normal human beings as near as possible. This was intended to produce, and gradually it has produced in the population of this hospital, a suggestion of relief. These stricken ones in their narrow way began to feel shortly after their admission that they were not pariahs, or people set apart from the whole world, but sick people to whom gentleness acutely appealed. As rapidly as possible, in keeping with the teaching of the best alienists, he discarded more and more all such bodily restraints as could be dispensed with. This policy expanded each year, and until it has reached now a surprising degree. To this he has added occupation, the combination of the two serving to produce a healing diversion. It was a fortunate combination of a man thoroughly fitted for his work, and the provision of the work in such shape as to elicit his best talents.

But over it all, above the policies of the hospital, above the treatment adopted, and the measures put into effect, changing only as circumstances allowed or demanded, but always long the same general line, there stood in its benign influence the commanding character and personality of him whom we mourn. To him this institution was a part of his personal self. He knew all of his patients, he knew their history and many of their previous surroundings, and their bearing upon the development of the terrible condition which had brought them under his care. He accorded to each one just such attention as was needed to lift as far as he could the depressing cloud that made life a misery. His control was almost supreme in the wards, and its effect upon his people was a most pleasing, yes, and inspiring spectacle. Added to this he knew absolutely the whole value of the hospital in its material part. He encompassed the entire domestic economy, which included the health, food, water supply, the heating, the ventilation, the sanitary condition, the preparation of the land and its productive farming the choice and purchase of more property, the planning and building of additions to the original houses, and the founding and successfully operated colony situated well away from the main building, the adoption of all mechanical economies for the betterment of the service, and the more easy performance of the best work in all departments. These and all these he knew, and it all made the western hospital for the insane an institution as near complete as might be, and its surroundings a feast for the eye and a place where rest and recuperation seemed most possible, and yet with all this labor, he seemed never hurried. He quietly began with a purpose, which he had carefully worked out, and he followed it, changing only the details which would more easily achieve his hoped-for results. Seeing the product of his labor and realizing his honesty, his purity of life, his christian character, he received the justified confidence of the people of the State, and he died the servant of the State with the full knowledge that he had done his duty, and that his work followed him in the appreciation of his fellow citizens.

I feel that I do not go beyond my rights as his friend to say that among the elements that went together to make his life a great one, was the character and help which was always near at hand, in the influence and strength of mind of his wife. In many ways she served to secure for him the best results of his work. With all of his lovable characteristics, his manliness, his intelligence, and his high purpose, Dr. Murphy was not always a patient man, and who is? Recollect that he was full of the rich blood of a belligerent ancestry, and naturally then he chafed at times under the restraints that an all too improvident and niggardly public policy placed upon him; his temper, as far as I know, never unjustly expended, was often sorely tried. His wrath was to be feared when he was aroused, and he was outspoken in his defense of right and in his denunciation of wrong, and persistent and clear in his demands for such things as made for the betterment of the

poor sufferers who came under his care. In all of those trying times, and necessarily there were many of them in the period of his service to the State, there coud be no one nearer to him and there was no better counselor than this good woman who was cheerfully, intelligently, and persistently in all things his helpmeet.

One afternoon in the fall before his death, unannounced I went to the hospital, and after some search I found our friend in the extreme one of the buildings, superintending, with a show of his former energy and intelligence, the installation of some new machinery, which was to add to the economical and more perfect working of the institution. I had from him the customary loving and old time welcome, and after a few minutes, as he was unable to walk so far, he was rolled back to his part of the institution in the center of the great buildings. The time was late in the afternoon and the sun was rapidly approaching the tops of the Blue Ridge. After a short stay in the house, with much effort he walked with me out on the vast upper terrace near the end of the great central building. There we stood in the soft glow of the coming twilight, looking down through the trees toward the town of Morganton. Our eyes ran delightedly through vistas made by the happy location of the trees over green slopes and soft velvety carpets of grass. Everywhere he saw the results of his work, and I appreciated his wonderful taste. He had left on this great lawn the best of the native trees, and had added to them only the choicest varieties of exotics suited to the place and to his purpose of beautifying the effect. Away to the South beyond the park confines, the property ran down to a stream, which meandered through fertile fields, here showing the work of the plowman in the upturned rich red soil, and there the result in green hillsides and leafy and well laden fruit trees stretching up to the top of a distant knoll. There was quiet everywhere, and it told of the coming night. The only sounds to break the stillness were the clink and rattle in the distance of the teams returning from the work in the fields, and slowly gathering into the barns. The air was still laden with the perfumes of fresh cut grass mingled with that of the late flowers. In front of us were the grassy slopes covered with the shadows of the trees made by the last rays of the sun. These slopes dropped in gentle grades into deeper hollows down to the bottom of the hillside near the stream. But the day was wearing out, and in the stillness and softened shades of the hour, he looked midway from where we stood and the deep hollow in the hills, and he directed my eye to a spot that seemed to both of us the most enticing in all the grounds. His weakness was overcoming him, and after gazing lovingly at all the beauty before him, his eyes rested again on the one spot that seemed to hold him longest, and then we turned away and went slowly into the house, humoring, as was necessary, his faltering steps. Night came on, and through its hours I was impressed with the thought that he was contemplating his death, and that he had chosen this place, which he had indicated, as the

one that he would select for his final rest. It was the place where they laid him. His friends in the village, mourning as men mourn the loss of a man whom they had learned to love and trust with implicit confidence, by common consent asked that he be buried in the grounds, and when those to whom this request was carried, consented, his fellow townsmen, too, chose the place that he had for his last home.

Surely as one looks over this great man's life and his works, realizing the firm sway of a superintendent that was always kind and gentle in its unfailing kindness and justice, the loving forbearance to those who deserved it, and the healing property of punishment given to those who needed it, always tempered with mercy, all that his great mind could do to affect the spiritual and material atmosphere of this institution, and then upon the grounds bearing the heavy burden of the crops, the rolling hillsides near at hand, and recalled those in the distance beyond the range of sight, place upon place, all carrying the impress of his energy and care, the verdure of the grass and the leafy trees, surely as one felt the inspiration of it all, the man and his works and their results, and the restorative rest that followed it, there could be no other legend inscribed on his monument more inspiring to the visitor as he stood by his last resting place and looked over the scene of his days of labor, than these simple words: "Hic fecit." He rests in the midst of his work he did so well, and respect and admiration for his life and character, and loving affection for his kindness and gentleness, make living memorials to his worth.

God grant that we may in our way, emulating his life and its example, so use the talents that have been given us that we may, like him, enter into the rest that has been promised to follow a well ordered and useful life.

PATRICK LIVINGSTON MURPHY, M.D.

BY RICHARD H. LEWIS, M.D., RALEIGH, N. C.

The subject of this memorial tribute was born in Sampson County near Clinton, October 23, 1848, and died in Morganton, September 11, 1907. His father the late Patrick Murphy of Scotch descent, was a successful lawyer and man of business, his mother, Eliza A. Faison, was a member of the prominent and influential family of that name residing in Sampson and Duplin counties. He was delicate as a child, but thanks to the life on a plantation with its mingled work and play, where his boyhood was spent, he grew up to be a strong and vigorous man.

His academic education was obtained in the schools of the neighborhood, at the famous Bingham School and at that of Col. Tew in Hillsboro. In 1869 he entered upon his medical studies at the University of Virginia and there began between himself and the writer a warm and devoted friendship that lasted unbroken and untarnished to the end. After one year there he went to the University of Maryland and was graduated M.D. March 1, 1871.

He began the practice of his profession in his native county, but soon moved to Wilmington, where, in association with Dr. Wm. J. Love, he continued his work as a general practitioner for several years.

Upon his unfortunate marriage in October, 1878, to Miss Bettie Waddell Bumgardner of August County, Virginia, who proved in every sense of the word a true helpmeet, he removed to that State. Shortly thereafter he was elected assistant physician in the Asylum for the Insane at Staunton and served in that capacity three years, with such ability, as the sequel showed, as to bring about his election as Superintendent of the Morganton Asylum.

When he wrote me that he was a candidate for that position I set about promoting his election with all my heart. In addition to letters to other members of the Board of Directors I had a personal interview with the late Dr. Fuller, who for many years was first assistant in the Raleigh Asylum, and who, owing to his experience and to his own personality, was a most influential member of the Board of Directors of the new institution. I was fortunate enough so to impress and interest him in Dr. Murphy that he wrote a personal letter to Dr. Fauntleroy, the superintendent of the Staunton Asylum, asking for a candid opinion as to his fitness for the place. After a full discussion by the Board of Directors of the merits and qualifications of the several candidates, among whom were some of the leading physicians of the State, Dr. Fuller read Dr. Fauntleroy's letter and that letter, together with his own advocacy based upon it, I was told, settled the question of the election of Dr. Murphy as the first Superintendent of the State Hospital at Morganton. The fact that I was thus, in part, instrumental in bringing about not only the professional advancement of my own dear friend, but, through the noble work he then began, in conferring an inestimable boon upon the unfortunate insane of our State, will ever abide with me as one of the most cherished memories of my life.

When he assumed charge of the asylum it consisted of a central or administration building and one wing, with a capacity of one hundred and fifty patients. At the time of his death the main building, with a base line of an even mile, and numerous other buildings, accomodating all together over one thousand one hundred patients, represented the plant that had grown up under his administration; a truly magnificent institution in structure, arrangement and appointments. To him, more than any other single influence, is due this marvelous development in so short a time, less than twenty-four years. While the general control lay in the Board of Directors and the means of growth in the Legislature, he so impressed them with his honesty as a man and his ability as a manager and so inspired them with his own enthusiasm in the noble work of ministering to the unfortunate insane, that they were led to do great things. Every one who has visited the hospital, with its mass of great buildings in grounds of unusual beauty and

who has observed its workings has been impressed with the fact that it was indeed a grand institution, guided and controlled by a master hand. I never went there but I was reminded of the great Corliss engine at the Centennial Exposition, so big, so powerful, so complicated, and yet so smooth and noiseless in its running. It was the man at the throttle, so thoroughly acquainted with every detail of the great mechanism and so sure of his knowledge.

Dr. Murphy was a great administrator of rare executive ability. In addition to a vigorous and well-informed intellect he possessed the gift of common sense, a real talent for mechanics and a keen power of observation. Nothing escaped his watchful eye. No cog slipped in the great machine that he did not note and correct it. These qualities combined with a strong will, the courage of his convictions and a conscientious and unfaltering sense of duty and responsibility made him the great executive officer that he was. To repeat the words of one of our leading business men, he was one of the great men of North Carolina.

Our friend was a typical Scotch American and his faults were the faults really of his virtues. He was essentially a strong man in body, mind and character; honest, frank and straightforward with a hatred for shams of all kinds. While his character was, perhaps more notable for the *fortiter in re* than the *suaviter in modo*, he had a heart of gold. He was a devoted and loving husband and father, a faithful, affectionate friend, a loyal and patriotic citizen. One of the most beautiful things in his character was his tender and unfailing interest in the welfare of his patients, which was ever uppermost in his mind. An intelligent inmate of the institution told me that in the several years of his residence he had, with one single exception, never heard anything but expressions of trust and affection for Dr. Murphy from the patients. What a tribute! The officers and employees of the institution all admired and loved him likewise.

In his long and painful illness from disease of the pancreas, lasting after its distinct development just a year, although fully aware of the final result, he never quailed but looked death in the face with calmness and confidence. Beyond the separation from his family and friends his chief regret was that his work was ended, a work that was truly his very life. It was indeed his ruling passion, literally strong in death, for his last indistinct words related to it.

He was a reader of good books and his mind was well stored with the best in science, history and literature. One of his greatest blessings and most attractive qualities was a keen sense of humor. His hearty and contagious laugh was a joy. He was an interesting and delightful companion.

He was an excellent general physician and in his specialty ranked among the first alienists in the country. He was no mere imitator of others, but initiated and carried to a successful conclusion improvements in the treatment of the insane that won admiration from his

associates. As a member of our own Society his worth was recognized in his election as a member of the Board of Examiners and as President, in which positions he served with honor and credit.

He had expressed a wish that he might be buried in the hospital grounds, and in deference to this and to an earnest petition from the citizens of Morganton it was agreed to by his family and the Board of Directors, and so, under the velvet turf of the sloping lawn, almost within the shadow of the great buildings and in full view of the beautiful mountains he loved so well, he was laid away to await the resurrection morn. After twenty-three years of arduous, devoted, unselfish and rarely successful work spent in ministering to the most pitiful of all God's afflicted creatures, winning thereby the gratitude of his State and honor for himself, he rests from his labors and his works do follow him.

LIFE AND WORK OF PATRICK LIVINGSTON MURPHY.

BY G. M. COOPER, M.D., CLINTON, N. C.

The history of a country is the record of the achievements of its great men. The modern history of France is the history of Napoleon Bonaparte, Victor Hugo and Louis Pasteur. The Crown Encyclopedia says that " for more than 20 years the life of Oliver Cromwell was the history of England" and in no less sense is that true of Shakespeare and Edward Jenner. The German historian of the future will place the name of Von Bering high on the roll of Germany's great men. Any schoolboy is familiar with the record of Daniel Boone's part in Kentucky history, and Kentucky historians of to-day are beginning to take note of its other great pioneer, Dr. Ephraim McDowell, whose courage was greater than any man who ever shouldered a gun and faced an Indian's arrow.

And so when the North Carolina history for the past quarter of a century is written, along with the name of Vance should be that of Dr. Patrick Livingston Murphy. For what Vance was to the political life of the State, Dr. Murphy was in a fuller measure to the medical profession.

As a native of Sampson County and in behalf of the Sampson County Medical Society, in a nonofficial capacity, I wish to offer a brief tribute to the memory of her great son. And in passing, I hope, Mr. President, you will pardon me if I call attention to the fact that it has been only a few years since the death of Dr. Kirby, for a long time Superintendent of the Eastern Hospital at Raleigh, another of Sampson's most distinguished sons, and also I would like for you to recall the fact that the first recorded operation for ovariotomy ever done in the State of North Carolina was performed by another of Sampson's eminent sons, Dr. Almond Holmes, of Clinton, one of the most refined and courteous gentlemen I have ever known. I mention

these names only to illustrate the type of gentlemen of which Dr. Murphy was an illustrious example.

Patrick Livingston Murphy was born in Sampson County on the 23d day of October, 1848. His first North Carolina ancestor was Patrick Murphy, who came from Scotland direct to this State. His mother before marriage was Miss Eliza Faison, a member of one of the largest and most influential families of Sampson County. His boyhood was spent on his father's farm in Sampson County while not in school. He was prepared for college at the old Male Academy at Clinton and at Bingham's. After the close of the war he was sent to the University of Virginia and afterward graduated in medicine at the University of Maryland in 1871.

He returned to Sampson and practiced medicine for a short while and then located at Wilmington, where he practiced in partnership with Dr. Love for a few years. In October, 1878, Dr. Murphy was married to Miss Bettie Waddell Bumgardner of Virginia, who survives her husband.

In March, 1879 Dr. Murphy was elected assistant physician in the Western Hospital of Staunton, Virginia, which position he held until he resigned in the spring of 1882. In December, 1882, Dr. Murphy was elected Superintendent of the Western North Carolina Asylum as its first superintendent, which position he so ably filled for a quarter of a century. Just here I can do no better than to quote a paragraph from the *Raleigh Christian Advocate* of February 6, 1889, written about seven years after the opening of the hospital for patients, and whose editor, Rev. Dr. Black, was his personal friend. "His credentials and all the reports concerning him were such as to have pointed him out clearly to the directors as the man for the place, and though there was no lack of able and accomplished physicians applying, he secured the honor easily. His management and the results of his work have justified the board entirely. His genius for organization manifested itself at once, so that the asylum opened on a basis, to which very few men could have brought it to under all the adverse circumstances of the time. His management since has been in all respects most admirable. He was governed, as the manager of all such institutions must, with great firmness but without harshness. He has great personal popularity with the subordinate officers and the employees of the asylum, while the patients are devoted to him, made so by his gentleness toward them and his manifest interest in them individually and in their welfare. In proof of his control over them it is only necessary to say that no form of physical restraint has been used in the Western Insane Asylum for three years. To those who associate clanking chains and other forms of personal ill-usage with insane asylums, this statement will doubtless be a revelation, but it is stated as a fact that the insane at Morganton are controlled by moral suasion united with medical treatment."

A magnificient tribute from one great man to another; and yet how

much, how infinitely greater are the achievements of the nearly twenty years since Dr. Black wrote the above sketch. Add to his record in the asylum management his official record as a member of the Board of Medical Examiners of North Carolina; President of this Society; an officer in the American Psychological Association, and as a member of the Board of Directors of the North Carolina School for the Deaf and Dumb, and other positions of trust and honor in church and state, these have made his services to the people of his State of untold value, and the people of this great State have not fallen short in their estimate of the man.

Descended from a long line of Scotch ancestry, he was a patrician of that old southern school as distinguished in its days as the Romans of past history. And yet, as the editor of the *Charlotte Observer* truly said in writing of his death: "To him all men and women were as one. There were none too humble to enlist his sympathy or challenge his best skill. * * * It is his glory that in his exalted professional life he knew no distinction between classes."

In the life-work of Dr. Murphy there is so much to commend, so many things which stand out to distinguish him as the foremost alienist of the South, that it is not necessary for me to call attenion to any particular phase of his work. Yet I hardly think a sketch of this nature complete without dwelling on his splendid achievements in the "Colony Treatment of the Insane." About five years ago Dr. Murphy had prepared ready for occupancy a number of colony buildings made after the order of the farm houses in that section of the State and each house to be occupied by a limited number of the insane patients of the Morganton Hospital. These colonies were a modification of the original German conception. The all-important idea in the establishment of each was to impress upon each patient, if possible, the fact that he yet had a home and that, though in a small capacity, he was still a factor in the affairs of his community, he still had something to do. How well he succeeded in this plan of treatment, is a matter of common knowledge to every medical man in the State today.

In describing the beginning of his experiment in a paper read before the Society at Charlotte two years ago, Dr. Murphy said, after telling of the nucleus of organization by sending a few quiet, industrious men to the first colony: "that a further experiment was made by sending those who seemed incurably demented, incapable by reason of their weakened minds, of doing any kind of work—most of whom had been residents of the hospital for years and years, in whom the last vestige of hope for any improvement had long vanished. Strange as it may seem to you, as it did to us, acquainted with these men and their disease, they immediately went to work and are to-day profitably employed. They have gained in health and self-confidence; they are happier because they feel there is yet something in life for them."

I believe in all sincerity that history will accord to Dr. Murphy his

true place as one of the greatest alienists of his time. Indeed, he was one of the men who lived far ahead of his fellows. And the fullest measure of his success was due to his one great guiding principle of always exhausting every means at his command in the endeavor to suit the treatment of each patient to that especial individual, and not to treat his patients in a routine manner. That I may emphasize more distinctly this superior quality in Dr. Murphy's character I hope it may not be considered amiss if I call attention to a book now before the public entitled "A Mind That Found Itself," and of which the *Journal of the American Medical Association* says editorially, "It calculated to stir the public mind to its depths." To quote further, "It depicts with vivid lights and shadows a malady whose sufferings and sorrows are the deepest that life can bring."

Briefly, it is the story of an educated young man, whose health is impaired and whose mind is shattered, placed in an asylum and whose condition is only made worse by the endeavor to administer routine treatment and to fit him into a class. He recovers and writes of his experiences. Whatever criticism this work may incite against the various hospitals of the country, not one line can be directed against the Morganton Hospital, because, as noted above, Dr. Murphy lived ahead of his time and his work was the building of a master hand.

It can never be said of Dr. Murphy, as we so often read in the daily papers, to the everlasting shame of the profession, pay your expert and get your testimony. He was a man of rugged honesty. He lived above the miasma of partisan politics and no politician ever dared lay his hand on the management of the great institution over which he so ably presided. And while the closing years of his life were to some extent embittered by the wanton attacks of a few man of small caliber, what man among us, even at the foot of the ladder to success, has not felt the sting of petty jealousy and the strife which is so often engendered by prejudice. And yet all such accusations only served to make his great worth to the State more appreciated and his star never shone with greater brilliancy than on the day of his death.

There are hundreds of homes in North Carolina to-day that have been made happy by the return of a loved one from his hospital with mind restored and life again made attractive.

He had the ability to invade that vast twilight-land of melancholia and instituting proper treatment to those with any remnant of mind left, thereby lifting the shadows and saving many an unfortunate from a condition worse than death.

According to Dr. Murphy's own statement at Charlotte two years ago, there were then twenty-five hundred insane persons in North Carolina who could not be taken in the hospitals on account of lack of accomodation. There can not be less than that number to-day, notwithstanding the increased appropriation made by the last Legislature. And as long as such a state of affairs exists, it behooves us as an

organization to throw the weight of our influence upon every Legislature and every would-be legislator, until every one of these poor unfortunate creatures have an opportunity to regain that which they have lost without which life is a curse.

When success has crowned our efforts we will have the satisfaction of a duty well done; and in so doing we will erect to the memory of Patrick Livingston Murphy, a monument more enduring than brass and more lasting than marble.

JOSEPH GRAHAM.

BY H. T. BAHNSON, M.D., WINSTON-SALEM, N. C.

Was born April 30th, 1837, in New Bern, N. C. He was the eldest of ten children, six of whom are still living. His father, William Alexander Graham, was a most honored son of North Carolina—legislator, twice Governor of the State, Senator of the United States and Confederate States, Secretary of the U. S. Navy, and projector of the famous expedition which opened the ports of Japan to the commerce of the world. His mother was the daughter of John Washington, of New Bern, N. C., one of the foremost men of his time, and a relative of General George Washington.

His childhood was spent in the ancestral home of Hillsboro, N. C. In 1850, at the age of thirteen, he accompanied his parents to Washington. D. C. Three years later, he entered the University of North Carolina, from which he graduated with honor in 1857. He then began the study of medicine under the famous Dr. Edmund Strudwick in Hillsboro, and took his degree of M.D. from Jefferson Medical College, Philadelphia, Pa., in the spring of 1859, spending the summer and fall of this year in the hospitals of Philadelphia.

On October 26th, 1859, he was united in marriage to Miss Elizabeth Hill, daughter of the late Thomas Blount Hill, one of the most cultured gentlemen of his day. The love and sympathy of this beautiful and refined woman made for him a home life that was ideally happy. Of the five children born to this union, only two survive to comfort the bereaved wife and mother.

After his marriage, Dr. Graham settled in Charlotte for the practice of his profession. Although, like his father and family, opposed to secession, he promptly responded when the State called her sons to arms, and with his four brothers went to the front. He raised a company of artillery, and was elected lieutenant. Upon the resignation of Captain Brem, he succeeded to the command, and the company was known as "Graham's Battery." The men were enlisted for the war, and not for twelve months as were most of the troops. The battery was attached to Branch's Brigade until after the battle of New Bern in March, 1862, when it was transferred to Daniel's Brigade. This battery fired the first shot of the cannonading, which preceded the famous charge of the third day at Gettysburg. Although Captain Graham

participated in most of the bloody battles in Virginia, he was never wounded. In 1864, Captain Graham resigned his command in the artillery and was commissioned Major and Surgeon of the 67th N. C. Regiment, in which capacity he served until the surrender.

Returning home, like all other gray-clad veterans to begin life anew, Dr Graham located in Gaston County, and there practiced his profession until the spring of 1869, when he returned to Charlotte, which was destined to be the stage of his great and honorable career. The following year, 1870, he formed a copartnership with Dr. Johnston B. Jones, which was broken only by the death of Dr. Jones in 1889. The late Dr. Simmons B. Jones succeeded his father in the partnership. Later, Dr. William A. Graham, an only son, on whom his father's mantle has fallen, became his partner, and by his valuable assistance and skill prolonged his father's life and relieved him of a portion of his work.

It was my good fortune to be counted among Dr. Graham's intimate friends, and at our Society and other meetings we were roommates for many years. Through this close and confidential association, I learned to appreciate the awful burden of distress and suffering he endured uncomplainingly, during nearly all the years of his active professional life. About 1870 he began to experience difficulty in swallowing food. It failed often to reach the stomach, and after a short time would be regurgitated. The symptoms were those of a structure of the œsophages, but neither during life nor after death was there a stenosis or pouching to be found. In vain he consulted the best clinicians again and again. Not one could give him relief, but all advised against any operative interference. At first the trouble occurred only occasionally, but gradually became more or less constant. Of late years, I have seen him lose meal after meal, while suffering the most distressing pangs of unsatisfied hunger, and for days before his death neither food nor drink could enter his stomach.

Under such a burden almost any other man would have sunk into helpless invalidism, but Dr. Graham's self-forgetfulness and devotion to his profession easily overcame this apparently insurmountable hindrance to his usefulness. To him, as to the great leader whom both of us loved and followed in war, the greatest word in the language was "duty," and he unflinchingly sacrificed comfort and home ties and life itself in its performance. To the very last he was always ready to respond to the call of the sick and suffering, and he truly lived for others.

In early life Dr. Graham connected himself with the Baptish Church, that being the faith of his mother, but his religion rose above any creed. It was the religion inspired by love of God and love for mankind. He was a diligent student of the Bible, and few have lived closer to the spirit of its teachings. Throughout his life he was a man of prayer, and the words which fell from his lips during his last agonizing days voiced his faith and love and "blessed assurance."

Surrounded by his family he "fell on sleep" August 13th, 1907, at the ripe age of seventy years and four months.

For nearly forty years Dr. Graham was the leading physician in his section. His broad intellectuality, his sound judgment, his keen discernment, his knowledge of the subject, his quick and correct diagnosis, his boundless sympathy, his devotion to his work, his great skill, his splendid nerve and prompt action—all inspired a confidence and love that gave him a practice which for extent and usefulness has seldom been equaled in this State. No doctor was ever more idolized by his patients, or more respected by his colleagues. Of distinguished presence and charming personality, he commanded the esteem of all with whom he came in contact. He was a born leader, but without the selfish ambition of the politician and demagogue. The offices he filled, whether civic or professional, came to him unsought, and solely in recognition of his merit and fitness. The Medical Society of North Carolina honored itself in electing him to its highest offices, in acknowledgment of his eminent skill and faithful, constant efforts to alleviate human suffering. He served on the Board of Medical Examiners from 1878 until 1884, and in 1886 was elected President of the Society.

In his pure life and spotless integrity Dr. Graham kept the faith of his fathers. His innate refinement, his cleanness of thought and word and life, were his birthright. His character was founded and built on the white stones of honor, truth, justice, love. Although reticent by nature, he was candid and fearless in expressing his opinions when asked for them. His temper was even, calm and well-balanced. He was gentle, kind, charitable, tender-hearted as a woman, generous and magnanimous. In his big heart there was no room for enmity or jealousy.

The intrepid courage of his early manhood was eclipsed by the unconscious heroism of his later years. Fully aware of the incurable character of his disease, and unmindful of his own suffering, he labored unremittingly to bring hope and cheer and sunshine into the darkened lives and homes of others.

We who have known him can not but be the better for the knowing. Through knowing him, each of us is better fitted for life's duties. We can conquer cowardice more easily, meet our temptations more valiantly and more surely keep from the sin of skirking. His life was a blessing, and his memory is a priceless heritage to his family, to the State and to our profession.

Dr. JOSEPH GRAHAM.

The following is copied from *The Charlotte Observer:*

Dr. Joseph Graham, the oldest and most eminent of Charlotte's physicians, died this morning at 2 o'clock at the residence of his son, Dr. William A. Graham, on West Seventh street.

The passing of this good man and great physician is an irreparable

loss to the State, whose history is inseparable from that of the Graham family and of the medical world, which he so singularly adorned.

For days this people have watched for tidings from his sick-room that would give some hope that his illness was not unto death, but the news ever presaged the inevitable.

Early in the summer Dr. Graham went to Chapel Hill to attend a reunion of his class. The surviving members are: Hon. A. C. Avery, Major Robert Bingham, Hon. B. F. Grady, Major John W. Graham, Dr. John E. Logan, Col. John S. Kenan, Hon. B. F. Whitefield. From Chapel Hill Dr. Graham went to Brooklyn to see his daughter, Mrs. Geo. Fitzsimmons, and grandchildren whom he had always loved with a father's love, especially his grandson and namesake, Joseph Graham Fitzsimmons. His wife accompanied him on his trip. The doctor was feeble when he left here, but he hoped to gain strength in the cooler atmosphere of the north. Instead of improving he became worse and decided to come home. Mr. Fitzsimmons accompanied him and Mrs. Graham. He was very ill when he reached here. His son, Dr. W. A. Graham, realized this. He and his wife—to whom Dr. Graham was devotedly attached—nursed him day and night with the assistance of Dr. Geo. Graham, Mrs. Fitzsimmons, Mr. Joseph MacLean, his son-in-law, whom he loved like a son, between the two there ever existing the relation of father and son.

Dr. Graham, with his unerring skill, knew his condition perfectly. He handled his own case, directing up to his last moment of consciousness, "Dr. Will" and Dr. George Graham as to the treatment. Saturday he said to "Dr. Will:" "Son, give me my glasses," and after they were adjusted he looked at his hands very closely and said: "I won't live but a few days." He had not retained any nourishment since his return home.

Since 1870, and possibly before, Dr. Graham had had some serious affection that caused him to choke often when eating. The trouble was not in the throat, but very much lower down—about halfway between the throat and stomach. He consulted Dr. Janeway and all the other famous specialists of that day as to the advisability of having an operation. None could diagnose the case, but all advised against the knife, so Dr. Graham returned home to begin a battle with the physical "thorn in the flesh" that baffled not only his skill, but that of the foremost New York physicians, not only of the 70's, but of each succeeding decade. And such a fight he made! No one but himself and his God knew how much he suffered, for, brave spirit, brave soldier that he was, he bore his cross without a murmur; not even to his loved wife and children did he complain, but his suffering, especially in the latter years of his life, could be read in his face.

This trouble caused his death.

Since the day of his return no food, no water, has passed beyond the obstruction. A man of less vitality, less combativeness, less nerve, would have succombed earlier. Dr. Graham had fought disease for others for nearly fifty years. It was one of his characteristics that he never gave up while there was breath in the body.

His physician instinct—this characteristic marked his last conscious moment. Up to the very last he advised his son and brother what to do for him; what to give him.

Throughout his illness, as throughout his long and useful life, he thought of others before himself.

He said to his son and daughter-in-law, who had nursed him so constantly: "I am giving you so much trouble."

Mrs. Graham, his devoted wife, has been in feeble health for some years and was not permitted to share the anxious vigil.

Since the first news of the Doctor's illness there has been daily, and up to a late hour nightly, a constant stream of people calling at the home to inquire of him. In each voice there has been a tremor; in each eye, a tear. "For a half century there has been no doctor here like him," said a friend yesterday. "Nor will there be for another half century," replied another.

His death is a personal loss, a heart bereavement to more people than any death that has ever occurred in Charlotte. Only that of Rev. Dr. Preston was comparable to it.

Dr. Graham's life, not only his skill, was given unreservedly to his patients. He was friend and adviser, as well as doctor.

His brothers, Judge Augustus Graham and Capt. John Graham, and his only sister, Mrs. Susan Graham Clark, wife of Judge Walter Clark, and her daughter arrived several days ago. Capt. James Graham, of Washington, came this morning. Mrs. Joseph Webb and Miss Rebecca Hill, sisters of Mrs. Graham arrived last week. From far and near came devoted ones to offer themselves for any service they could render, but there was none.

Dr. Stokes, of Salisbury, spent Sunday at his bedside. Nothing could be done—nothing but to stand by and see this great physician drink of the cup that was not to pass.

Surrounded by this wealth of love, his great unafraid spirit passed. It will ever be embalmed in the love and tears of a people to whom he gave himself, day and night, in cheerful service for fifty years.

BIOGRAPHICAL.

Joseph Graham was a son of that distinguished son of North Carolina, William Alexander Graham—legislator, United States Senator, twice Governer of the State, Secretary of the Navy, projector of the famous Japan expedition, gentleman and scholar. His mother was Susannah Sarah, daughter of John Washington, of New Bern, N. C., one of the foremost men of his time and of kinship with General George Washington.

Joseph Graham was the eldest of ten children: Joseph, John Washington, William Alexander, James Augustus, Robert Davidson, George Washington, Augustus Washington, Susan Washington, Alfred Octavius, Eugene Berrien. The two latter died when quite young. Of the others all survive but Dr. Graham and Capt. Robert Graham.

Joseph Graham was named for his distinguished grandfather, Major

General Joseph Graham of revolutionary fame, was born in New Bern, N. C., April 13, 1837. His childhood and boyhood passed with his parents in their ancestral home at Hillsboro. His first school days were spent at the Caldwell Institute in Hillsboro. When Joseph was thirteen years of age his parents moved to Washington City, Governor Graham having accepted a position in President Fillmore's cabinet (1850). Governor Graham and President Filmore were considered the handsomest men in Washington.

For the two years in which his father remained in office Joseph was placed in the Abbott Classical and Mathematical Academy at Georgetown. In 1853 he entered the University of North Carolina, from which he graduated with honors in 1857. He then began the study of medicine under the famous Dr. Edmund Strudwick at Hillsboro. In the fall of 1857 he entered Jefferson Medical College in Philadelphia, from which he graduated in the spring of 1859. The following summer and fall were spent in the hospitals of Philadelphia.

Before leaving his native State the thread of romance—that "sentiment" which Rev. Dr. Kincaid of the First Presbyterian Church recently, so beautifully described as the sweetest and purest part of mans nature—was in the spinning. It drew the brilliant young doctor back to the little town of Hillsboro and there, on October 26, 1859, just a year after he had reached his majority, he was united in marriage to the woman of his choice, Miss Elizabeth Hill, eldest daughter of the late Thomas Blount Hill, of distinguished North Carolina ancestry, and one of the most cultured and polished gentlemen of his day. This union with this beautiful and high-born woman—his peer in birth and refinement—was ideally happy. Throughout the 48 years of their wedded life there was perfect love and sympathy and a home life that was beautiful. Five children were born unto them: Elizabeth (the late Mrs. Joseph MacLean); Joseph, Jr., died 1866, aged 7 years: William A. Graham (for many years one of Charlotte's leading physicians); Riddie (Mrs. Geo. Fitsimmons), and Thos. Hill, who died at the age of three years.

Dr. Graham came to Charlotte in 1859, came to the town that his distinguished ancestors had made famous in revolutionary annals by their bravery, and began the career which has made him so famous throughout this and other States as a physician. His practice was interrupted by the war. The State passed the ordinance of secession May, 1861. Governor Graham, then living, was ardently opposed to the measure, but when it carried, like General Lee, he stood by and for his State, serving all through the war as Senator in the second Confederate Congress and giving to the service of the Confederacy his five sons, all who were of military age.

Dr. Graham's character and all that he was to his country, his town and his profession must be considered from four points: As soldier, physician, citizen, man.

AS SOLDIER.

When the war call went forth this man, his Scotch-Irish spirit fired by the revolutionary blood within his veins, went to the front. He raised a company of artillery, known as Brem's Battery (named for the late Col. Thos. H. Brem), but afterward called Graham's North Carolina Battery. Dr. Graham began service as second lieutenant. Upon the resignation of Capt. Brem, he was promoted to the captaincy.

Dr. Graham's command was known as Battery C, Tenth North Carolina Regiment, and enlisted for the war, not for twelve months, as most of the troops did. The first officers were Thomas H. Brem, of Charlotte, Captain; Samuel J. Lowry, First Lieutenant; Dr. Joseph Graham, Second Lieutenant; A. B. Williams, Junior Second Lieutenant; J. Springs Davidson, Orderly Sergeant. Lieutenant Williams succeeded Captain Graham as captain of the battery till the end of the war. He died at Fayetteville during the past year.

The battery was first attached to Branch's Brigade and served with it until after the battle of New Bern in March, 1862. It was then transferred to Daniel's Brigade and took part in the battle of Malvern Hill. It remained with Daniel's Brigade until the batteries were formed into battalions and was then assigned to Poague's battalion, army of Northern Virginia.

The battery participated in the battle of Gettysburg and the subsequent campaigns with this command. It was the battery that fired the first shot in the connonade that preceded the charge of Pickett and Pettigrew on the third day of the Gettysburg fight. On the same day Maj. W. A. Graham, who was with Stuart in the cavalry, was wounded.

In the campaign against New Bern and Washington, N. C., in February, 1863, Captain Graham served as chief of artillery upon the staff of Maj. Gen. D. H. Hill and directed the operations of that arm of the service.

The battery also took part in the Mine Run campaign and in the shelling of McClellan's fleet on the James River with 80 guns in the vain hope of sinking some of his ships. At the second fight at Bristow Station Dr. Graham's clothes were rent by a number of bullets.

In 1864 Dr. Graham was appointed a surgeon in the State service and assigned to the Sixty-seventh North Carolina Regiment, Col. J. N. Whitford, and remained here until the surrender. If he could have had the promotion which he deserved for conspicious gallantry in the artillery service he would have remained with it. By every token he should have been promoted to major, for which position he was recommended by the Adjutant-General of the State, after his long service with Battery C, but it was keenly felt by most of the North Carolina officers that Virginians were given the preference in the promotions, and as he intended to make the practice of medicine his life-work, Dr. Graham secured the appointment as surgeon.

Well indeed may the soldier's wreath of honor lie on his casket to-day. Because of soldiers of such spirit and caliber as Joseph Graham, the Confederacy's fight could be "unparalleled in the history of nations."

PHYSICIAN.

After Lee and Grant met at Appomattox, one to tender, the other to accept the sword, Dr. Graham, like all other gray-clad heroes, returned home to begin life anew. He decided to locate in Gaston County, so moved his family there and practiced there until the spring of 1869, when he returned to Charlotte, destined to be the scene of his great life-work, where he was to carve his name highest up in the Physicians' Hall of Fame.

Dr. Graham brought to his work a mind prepared by study, a heart governed by love, a hand trained by experience. His fame soon became noised abroad. The great Dr. Marion Sims of New York offered him a partnership, but Dr. Graham preferred to remain in Charlotte. Had he gone to New York fame would have built him a monument in Bryant Park as it has Dr. Sims, for Dr. Graham's genius was of the same order and kind as the great Southerner whom the State and city of New York has honored in bronze.

Dr. Graham was the leading power of the medical world of this part of the State throughout the 48 years of his practice. His intellectuality, his force, his judgment, his prompt action, his keen discernment, his knowledge of his subject, his ready and correct diagnosis, his splendid nerve, his devotion to his work, his boundless sympathy, his great skill, all inspired a confidence and love that gave him a practice that, for size and influence, has seldom been equaled and never exceeded by any physician of the State. His patients were his friends, his devoted loyal friends. No physician was ever more idolized by his patients, or more respected by his colleagues. His diagnosis was the ultimatum; his opinion, the right court of medical appeals. He gave himself day and night, when sick as when well, to his work. He went as readily to the poor as to the rich. All men were equal before the law of his ready sympathy, kind heart and wondrous skill. He was self-reliant and resourceful and his presence in a sick-room inspired confidence and hope.

To his heroic and skillful measures many in this city owe their lives.

The medical world of North Carolina has acknowledged his eminent skill throughout the 48 years of his constant work in alleviating the sufferings of mankind.

A years after his return to Charlotte to live, 1870, Dr. Graham and the late Dr. Johnson B. Jones, one of the greatest physicians of his day, formed a partnership which was broken only by Dr. Jones's death in 1889.

The late Dr. S. B. Jones succeeded his father in the partnership.

Later William A. Graham, Dr. Graham's only son, on whom his father's mantle has fallen, became his partner, and by his valuable assistance and skill, prolonged his father's life by relieving him of work that the latter would do, whether sick or well; whether burning with fever or shaking with a chill.

Dr. Graham held a number of positions in the local and State Medical Societies. His skill made him conspicuous, always in rank in his profession a "Saul" among his fellows.

A wail of sorrow comes from hundreds of sick-rooms in Charlotte to-day for the great physician, the loved friend whose ministry they will know no more. His place in those homes, in those hearts, must ever be unique. As his father was esteemed by many "the greatest statesman the State has produced," so his son will be, to his large and devoted following, the greatest physician the State has produced.

CITIZEN.

As a citizen he was foremost for the advance of his State and town. He understood men and measures; inherited a talent for leadership, and was heeded no less in municipal affairs, when serving often on the Board of Aldermen of this city, than in medical councils. His intellectuality was so strong, his foresight and judgment so keen that his opinion carried weight. Many of the city's best laws and ordinances were suggested by him.

He came of the blood that led, not followed. Said Hon. J. H. Weddington to-day:

"I have known Dr. Graham since the war. He always stood at the head of all great movements looking toward the advancement of Charlotte."

THE MAN.

In his clean life and spotless integrity he kept the faith of his fathers. A Graham of the Grahams, his character was built on the white stones of honor, truth, justice, love. He was a broad man. There was no littleness in him. He was bold, brave, open, candid. He had opinions and never hesitated to give them when asked. His temper was even, calm and well balanced. His refinement of nature, his cleanness of word and life were his birthrights. He was gentle, kind, charitable; tender as a woman in the sick room; generous and magnanimous. He had a purpose in life, to alleviate suffering, to benefit mankind, and he fulfilled it. He followed not the clamor of the world, but walked calmly in his path, turning neither to the right nor left, but keeping his face ever toward the white light of truth and honor. In his big heart and high nature there was no room for enmity. In early life Dr. Graham connected himself with the Baptist Church, that being the faith of his mother, but his religion rose above any creed. It was the religion of fear of God and love of mankind. He was a close student of the Bible, and few ever lived its teachings better than he. A man

of great reserve, who permitted few to come within the holy of holies of his nature, yet he was full of tender sentiment. When the greatest sorrow of his life came, the death of his eldest daughter, Mrs. Joseph MacLean, who was loved by all in this community, one of the ministers of the city who called was asked to have prayers. There were many Bibles in the house, but Dr. Graham loved one best. Turning to his son, he said, "Will, get my mother's Bible."

Dr Graham was a man of prayer. It was permitted to only a few to hear the words of prayer which fell constantly, sometimes almost audibly, from his lips during his illness, but those few will never forgot those words. They breathed of faith, of love, of "blessed assurance." He died fortified by the rites of a religion that followed closely the teachings of the Master.

Of Langdon Cheves a distinguished son of South Carolina, it was said: "He was above the weakness of vanity and the pettiness of jealousy." Of Judge William Shipp it was written: "He has laid the ermine aside unsullied and unstained." Of Vance was it said by his distinguished colleagues: "He has wrapped his robes about him and stepped with the faith of a Christian and the dignity of a senator into the shade of death."

So, Dr. Graham a man "above the weakness of vanity or pettiness of jealousy," with the "ermine of his profession spotless and pure" has "stepped with the faith of a Christian and the dignity of a senator into the beyond to meet and hear the Great Physician say: "I was sick and ye visited me. * * * Inasmuch as ye did it unto the least of these ye have done it unto me."

WILLIAM T. HOWARD, M.D.

MR. T. B. KINGSBURY.

There died in the State of Maryland some three weeks ago, August 6, 1907, a very gifted, a most useful and honored physician, Dr. William T. Howard, aged eighty-six. He was born in Mecklenburg County, Virginia, and lived at Warrenton, N. C., probably a quarter of a century or more, for it was there he practiced his profession with such wonderful success, and laid the foundation for greater work and higher repute. I knew him slightly so far back as 1849 perhaps, and after 1860 I knew him intimately, and was his guest at his home in Baltimore in 1868. He was my own physician for years, and administered unto my family likewise. In 1867, I think it was, he was elected a professor in the distinguished University of Maryland, and continued to serve actively until about his 80th year, I suppose when he was made Emeritus Professor, and retired from active labor. I have understood that in his last years he interested himself by writing one or two medical works of some kind, but my information is quite limited here.

If I were a physician, or if I were writing this for physicians, I

would undertake to tell what I really know of Dr. Howard as a practitioner in medicine. He was par excellence the greatest physician I have ever known or seen. I except no one. The man who was greatest next to him was of North Carolina birth, a native of Guilford County, the late Dr. Loton G. Watson, who came near being chosen a Professor in a Philadelphia Medical College, somewhere about 1845 or 1846, and served for two or three years as a Professor in the Transylvania University of Kentucky. He was a man of very unfortunate habits that wrecked and slew him. He was a genius indeed, and when the North Carolina Medical Convention met in Wilmington some twenty years or more, since, I wrote of him at some length, setting forth his originality and ability. One of the ablest medical men in the Northern part of our State talking with me in 1876, about Dr. Watson, said that in 1836, he read medicine under him and that he taught then the same medical principles and practices that he and Dr. P. W. Young, his able partner, then were practicing. It was Dr. Montgomery Paschall.

Dr Howard was a marvelous doctor of physic. His power of diagnosis was a wonder to some doctors and many of the unprofessionals. I could fill probably two columns with an account of cases, of which I am informed, that clearly set forth his greatness, his wonderful gifts to discover disease, to find out with unerring precision and penetration just where the battle was raging in the sick person between the attacking disease and nature, the great medicatrix. I know of cases that are positively most extraordinary, when he readily discovered the real disease when doctors of repute failed completely. There was one case I recall in which he at once ascertained a very remarkable disease, when perhaps a dozen professors in an able faculty had absolutely failed to discover the real disease.

Dr. Howard was a good looking man of great mental resource and confidence, who was firm and unyielding when he had made his examination and study of a case. He held his opinion determinedly against all comers. I know instances of this kind. He was never overthrown in his dashes against opposers in the field. He was indeed a marvel of greatness, and I firmly believe he was beyond fair question the very foremost physician I ever beheld.

Not to prolong this consideration of the merits of a personal friend. I make but one more reference to him. I once read, forty years ago, perhaps it was, a manuscript letter written by the late Dr. John Buckner (if that is the spelling), a very eminent physician of Baltimore, from Paris to a personal friend of his. I remember that he told of several visits to the private clinic of a then famous French doctor. He said he had seen him examine several patients, and he fully believed that Dr. William T. Howard, of Warrenton, N. C., was more than his master in auscultation and percussion. That, remember, was before my friend had been called to the Baltimore Faculty. I am as

sure of Dr. Howard's supreme greatness in divining and treating disease as I am of the supremacy of Dr. Howard Kelly of Baltimore, in the great field of surgery. I have written nothing that I do not believe, and I could not write less of so accomplished and great a physician and friend. I once witnessed in Baltimore an animated discussion and controversy between him and another member of the Medical Faculty. It was mainly "all Dutch" to my limited understanding and information, but I easily recall that Dr. Howard, at last worried by the prolonged discussion, arose and going to his shelves in his library (it was there the earnest controversy occurred), took down an octavo and turning to a page—say 304—walked to the table by which the other doctor was sitting, and placed the volume opened before him. Returning he took down another stout volume and opening at—say 407th page—he put it on the other volume. Again he repeated until four or five volumes, all opened at the precise pages he desired, were before the astonished competitor. Dr. Howard said: "Now turn there and read what those eminent authorities say." He did not have any notes or figures to guide his memory, but opened each book and from memory found all he sought or required. I have never seen any other such manifestation of exact memory of that kind. He not only recalled what able medical men had written, but turned at once to the very pages in each volume that contained the judgments. The other doctor was easily, completely floored.

Dr. Howard joined the North Carolina State Medical Society in 1858, and on his accession to a professorship in the University of Maryland and removal to Baltimore in 1872, was later made an honorary member, and his name was on the State Society's records as such to the day of his death.

Dr. Howard was married thrice. I knew well his first wife, an elegant, handsome, intellectual lady of Warren County, N. C. I am of the impression that he left no children. His second wife was a refined, elegant lady from Northampton County. His last wife was from Baltimore. James Montgomery, an English poet of some fame and merit, and who was associated in editing with the elder Joseph Gales, afterwards so well known in Raleigh and in North Carolina, the Sheffield (England) *Register* in one of his poems, entitled "Friends," has this stanza, tender and simple:

"Friend after friend departs;
Who hath not lost a friend?
There is no union here of hearts
That finds not here an end."

DR. T. D. HAIGH, FAYETTEVILLE, N. C.

With a pang of sorrow we chronicle the passing of another of North Carolina's grand old physicians. The death of Dr. Thomas Devereaux Haigh, at his home in Fayetteville March 23d, 1908, removes one who,

during his active years, was most prominent in the medical profession of his State. Born in 1828, he had spent his long life of eighty years in his native town. Dr. Haigh was a graduate of the University of New York, class 1851. Upon his graduation he began practice in Fayetteville where he soon become a commanding figure by reason of his great ability and force of character. In 1874, he joined the State Medical Society; in 1876, was made Vice-President, and in 1888, he served as President of the Society. For years he was President of the Cumberland County Medical Society. Few men have left a stronger impress for good upon the communities in which their lives were spent. As a physician he was prominent in his profession, as a citizen he was a pattern for the younger men about him, as a friend he was constant, loyal and true. In the home circle his life was a bendiction, as a Christian his example was in all respects meet for emulation.

Dr. Haigh had not been actively engaged in the practice of medicine for several years. Because of his advanced age and failing strength, he had been forced to retire. He is survived by his wife and seven children.

DR. LAWRENCE EDWARD HOLMES.

Dr. Lawrence Edward Holmes was born at Birmingham, England on January 26, 1873. His father and mother with their six children left England and settled in Henderson County, North Carolina, in the end of the year 1881. From 1883 to 1889 he was a pupil in a private school taught by Frank Valentine, U.A., of Cambridge University, England. In 1890 at the age of seventeen he entered the sophomore class at the University of Tennessee, where he graduated with the degree of B.A. in 1893. During this time he always stood at the head of his classes in literature and language. While at the University of Tennessee he became a member of the Kappa Alpha fraternity.

On leaving the University of Tennessee in 1893, he entered the Medical School of the University of Pennsylvania, where he graduated with the degree of M.D., with high honors in 1897. While at the Medical School of the University of Pennsylvania he made the highest average four years record of any man in his class, besides winning several prizes for excellence in special subjects.

After graduation at the Medical School he spent two years as resident physician at the Episcopal Hospital, Philadelphia. On leaving there he spent a year traveling in Europe and Asia as private physician. On returning to this country in 1900 he accepted the position of resident physician to the Clarence Barker Memorial Hospital at Biltmore, N. C., with which institution he remained intimately connected up to the time of his death. In 1904 (or 1905), he opened an office in Asheville and built up a considerable practice there in addition to his practice at Biltmore and the surrounding country.

During the severe weather of January, 1908, he seemed to have been very much overworked, and to have gotten in a run down condition, and contracted grippe and pneumonia, from which he died on February 5, 1908, after an illness lasting six days.

He was a very active member of the Protestant Episcopal Church, and at the time of his death was a vestryman of All Souls' church, Biltmore.

DR. ROBERT H. HOLLIDAY.

Dr. Robert H. Holliday was born in Preston, England, A. D., 1841, and died in Clinton on Friday, March, 13, 1908, at the age of sixty-seven years.

As a boy in his native country, young Holliday was filled with the ambition, so common to English boys of his day to become a sailor, and served an apprenticeship in the pilot service and later sailed for this country, landing at the port of Wilmington, N. C. Becoming tired of the life of a sailor, although still a boy and a stranger in a strange land, he left his ship and after various experiences came with Mr. Bryant Newkirk to his home in the Black River section and was received with great kindness into Mr. Newkirk's hospitable family. He attended the neighborhood school and made many friends. Soon afterwards the Civil War began and young Holliday volunteered and joined the Wilmington Rifle Guards, and as a true and loyal son of his adopted land went at once into active service as a soldier. He was wounded in the knee in battle in Virginia and for a time disabled for active service in the field and was assigned to ordnance duty at the Confederate Arsenal at Fayetteville, N. C. Some months later he was elected First Lieutenant of Company F, Second North Carolina Battalion and served with gallantry until the close of the war.

When Sherman's army marched and straggled and foraged and pillaged through this region, Lieutenant Holliday was at his home on furlough and together with Parson Colin Shaw and others, organized a company known as "Shaw's Bushwhackers," which did good service in harassing Sherman's bummers and protecting the homes of the Black River country and lower Cape Fear.

During all his life Dr. Holliday maintained a great interest in everything connected with the Civil War, and was for many years commander of the Confederate Veterans of Sampson County.

After the close of the war Lieutenant Holliday returned to his old home and applied himself to the study of medicine under Dr. Seavey, a prominent physicion of the county, and afterwards was graduated from the Baltimore Medical College and located in the western part of Sampson County for the practice of his profession.

Here he spent many years and acquired an extensive country practice, and made many friends. He was married to Miss Della Fisher, who with three sons and a daughter now survive him. About the year

1885, Dr. Holliday removed with his family to Clinton, and with his son, Mr. R. W. Holliday, conducted a drug store and office practice until his death.

His genial nature and broad sympathies and loyal friendships had won him hosts of friends. He had been for many years a prominent member and officer in St. Paul's Episcopal Church in Clinton. He had served several terms as mayor of the town of Clinton. He died as he had lived; loyal to the Christ in whom he trusted; loyal to the church; loyal to the country of his adoption, and to her lost cause, for which he was ready to give his life; loyal to his mother country and rejoicing in England's greatness; loyal to his friends; devoted to his family. He is gone and we shall miss the sunshine of his presence and the inspiration of his unfailing optimism.

"Twilight and evening star,
And one clear call for me;
And may there be no moaning of the bar
When I put out to sea.

"Twilight and evening bells,
And after that the dark,
And may there be no sadness of farewell
When I embark.

"But such a tide as moving seems asleep
Too full for sound and foam,
When that which drew from out the boundless deep,
Returns again home.

"But though from out the bourne of time and place
The flood may bear me far,
I hope to see my Pilot face to face
When I have crossed the bar."

DR. J. F. BEALL, LEXINGTON, N. C.

Dr. J. F. Beall was born at "Beallmont," his ancestral home near Linwood, Davidson County, September 1st, 1837, and resided there most of the time until he departed this life on the 7th of December, 1907.

Having completed his education and prepared himself for the profession of a physician, and the war between the states coming on, he entered the Confederate Army as a private and for gallantry and good conduct as a soldier, he was promoted to the rank of major of the 21st regiment and took part in all the principal battles of the Army of Northern Virginia from Manassas to Petersburg, often gallantly leading the regiment in battle in the absence of the colonel. He received five wounds and carried to the grave these honorable marks of his devotion to a just cause. Some years ago he wrote a most interesting history of the 21st regiment and it has a prominent place in the war

records of the North Carolina troops. After the war he entered upon the practice of his profession as a physician and pursued the same for years with great skill and success.

In 1869 he was married to Miss Margaret Cornelia Harper, of Caldwell County, and she and three children, Frank H., Carrie M. and James J., survive to mourn their irreparable loss.

In politics Dr. Beall was a firm and consistent Democrat but tolerant and considerate of the opinions and political feelings of opponents. So popular was he that against his wishes and protest he was nominated and elected to the State Senate of 1882-3, and made an able and active member of that body.

He was for years a member of the Presbyterian Church, leading a faithful and consistent Christian life, illustrating the sustaining power and blessedness of Christianity by bearing with patience and cheerfulness the pain of sickness which came upon him in his latter years.

Dr. Beall was a man of superior natural gifts, well-informed, noted for sterling integrity of character and high sense of honor, genial and pleasant in manner and a man of great force of character. Faithful and honorable in all the situations of life, he has gone to enjoy the reward of the righteous.

DR. J. D. McMILLAN, LUMBERTON, N. C.

Dr. J. D. McMillan of Lumberton, died in James Walker Memorial Hospital, at Wilmington, Wednesday morning, March 7th, 1908. Dr. McMillan had not been well for several weeks, but attended to his duties and visited his large number of patients until Tuesday of last week, when he was taken very ill, and Dr. Bullock of Wilmington was telegraphed for. He was taken to Wilmington on Saturday night, and an operation for obstruction of the bowels was performed Sunday morning at eleven o'clock, but little hope for recovery was felt by his physicians. The remains were brought to Lumberton Wednesday afternoon and interred in the cemetery Thursday afternoon at three o'clock. The funeral took place in the Presbyterian Church, of which he had been a consistent member for over thirty years. The funeral services were conducted in an impressive manner by the Rev. A. F. Baker. The pall-bearers were: L. A. McAllister, N. J. Thompson, K. M. Biggs, C. B. Townsend, B. M. Davis, A. Nash, A. H. McLeod and W. P. McAllister. The physicians of the town and visiting physicians attended the funeral in a body. The church was draped in mourning by loving hands.

Dr. McMillan was born on September 11th, 1850, at Parkton, N. C., this county, and graduated in medicine at the Jefferson Medical College of Philadelphia, in 1876. He located in Lumberton shortly after receiving his diploma and had been a resident of the town since that time. He twice married. His first wife, Miss Sarah E. McMillan, of Parkton, died in 1882, leaving one son, John D. McMillan. Two years later Dr. McMillan was united in marriage to Miss Belle Rowland, of

Lumberton, who with one daughter, Miss Flora Neill McMillan, survive him. Dr. McMillan had one of the largest practices of any physician in the county and the love felt for him as a physician and friend was great. His life was a most exemplary one. A man of gentle, dignified and noble bearing, a heart which felt for all in distress, straightforward and open in all his dealings, he leaves countless numbers of people to mourn their loss.

DR. ELIAS KERNER, KERNERSVILLE, N. C.

Dr. Elias Kerner died at the home of his son, Mr. J. F. Kerner, at Kernersville, N. C., on the morning of July 22d, 1907, at 9 o'clock, after an illness of several months. Dr. Kerner was born February 1, 1826, and was therefore in the 82d year of his life. He had suffered greatly recently with rheumatism of the heart which was the immediate cause of his death. He was a successful practicing physician for more than 55 years, and was a great friend to the poor, and will be greatly missed in this community. He served a term in the Legislature of North Carolina during the Civil War.

The funeral services were conducted from the Moravian Church by the pastor, Rev. E. S. Crossland, of Winston-Salem, after which the remains were laid to rest in the Moravian Cemetery.

DR. RANDOLPH VAMPIL, LUMBERTON, N. C.

Dr. Vampil died at his home in Lumberton, N. C., September 17th, 1907, aged 86 years. He was one of Lumberton's most prominent physicians and was reputed for his high character and large wealth. He moved to Lumberton from Charlotte twenty-five years ago, and practiced medicine successfully for a number of years. He is survived by one daughter, Mrs. W. W. Carlyle, of Lumberton.

DR. R. C. WASHBURN, GREENSBORO, N. C.

Dr. R. C. Washburn died November 28th, 1907, of blood poisoning at St. Leo's Hospital, Greensboro. He had resided near Guilford Battle Ground for twelve years where he devoted his whole attention to farming and merchandising.

DR. C. L. BRYAN, TRAP HILL, N. C .

DR. M. W. HARPER, DUNN, N. C.

DR. S. B. KENNEDY, WINDSOR, N. C.

DR. H. A. McSWAIN, WADE, N. C.

DR. ROBERT ROBERSON, WAXHAW, N. C.

DR. C. H. LEWIS, FARMERS, N. C.

Dr. C. H. Lewis died April 23d, 1908. He was a student at Jefferson Medical College, in 1878. For several years he was a member of the North Carolina Medical Society and also of the Randolph County Medical Society. Heart disease was the cause of his death. He was buried at Farmers, N. C., under Masonic honors.

DR. J. J. MANN, LOUISBURG, N. C.

Dr. J. J. Mann, one of Louisburg's leading physicians, died on May 29th, 1908, of heart failure after just a short illness. The funeral services were held in the afternoon at 5 o'clock, Rev. George M. Duke, officiating. A large procession followed the remains to the grave to pay the last respects to the deceased's memory. He was about forty years of age and leaves a brother, Mr. W. Hal Mann, and two sons, Joseph and Pell Mann, and one daughter, Miss Ruth Mann.

DR. JOHN D. SPICER, GOLDSBORO, N. C.

Dr John D. Spicer, one of Goldsboro's most eminent physicians, died on June 8th, 1908. For many years he has stood at the head of his profession and kept up his practice until only a few days before his death. Dr. Spicer was a native of Onslow County, coming to Goldsboro soon after the war. He was a graduate of the State University, and an active member of its Alumni Association. He is survived by a devoted wife, and eight children, four sons and four daughters, and a large number of relatives. The funeral was held on June 9th, conducted by Rev. F. W. Farries, pastor of the Presbyterian Church.

DR. JASPER LEE BEAM.

Dr. Jasper Lee Beam was born in Lincoln County, N. C., March 7, 1868, and received his medical degree from the Atlanta College of Physicians and Surgeons in 1899, and the Baltimore Medical College in 1904. He practiced his profession at Crouse, N. C. This being his home at the time of his death, which occurred October 25th, 1907.

Dr. Beam was a man who was held in high esteem by all classes of people, both laymen and medical. He was a member of the North Carolina Medical Society and Lincoln County Medical Society. He was a member of the E. Lutheran Church.

He leaves a wife and one son, and several brothers and sisters to mourn his decease.

JAMES HERBERT REYNOLDS, M.D.

Dr. James Herbert Reynolds was born on the 27th day of August, 1878, in Asheville, N. C. He received his preliminary education at Bingham School, Asheville.

At the beginning of the Spanish American War, he early volunteered, and was Sergeant in Company H.

After the war, and when his company was discharged, he took up the study of medicine, graduating from the Louisville Medical College in the year 1903.

Immediately after his graduation he became associated in the practice of his profession, with Dr. James A. Burroughs, of Asheville, N. C. Though at the time of his death, Dr. Reynolds had been practicing less than five years, he had made an enviable reputation, commanding the respect, confidence and esteem of his professional brethren. His sterling worth and ability won public recognition. And he was affectionately regarded by all with whom he was intimately thrown.

He was true to his Scotch-Irish ancestry, a gentleman in all things. Jealous of his own rights and honor, he was in consequence singularly considerate and thoughtful that neither the rights nor honor of others would suffer by wrongful act of his. Unassuming and retiring in disposition, he was, nevertheless, aggressive and fearless in answering duty's call.

He faced the end with a fortitude indicating a past void of offense, and a fearlessness which showed his faith as to the future.

But for his untimely death, which occurred on June the third, there can be no doubt but that age would have fulfilled the promises of youth, and that his career would have been peculiarly useful and distinguished.

DR. WILLIAM RHODES CAPEHART.

William Rhodes Capehart was born at "Scotch Hall," in Bertie County, October 31st 1836. His parents were representative of all of the old families in this part of the State. On arriving at manhood he read medicine in New Orleans and began practice. He was a surgeon in the Confederate Army and saw service in both field and hospital.

At the close of the war he located in Edenton to practice his profession. Here he was the friend and peer of those eminent surgeons and doctors, Richard Dillard, Sr., W. A. Norcom and Edward Warren.

In 1872 he purchased the magnificent Avoca Farm and Sutton Fishery. Later he moved there to live, and then practically quit the practice of his profession. Quite often he yielded to the importunity of those who knew his great skill and rendered professional services. He was often called in consultation with other physicians. In medicine his great strength lay in his fund of practical horse sense. He knew how and what to do. His judgment in sickness was almost unerring. He is best known as a farmer and fisherman. The "Avoca Farm" is one of the best in the State. The late Cullen Capeheart, one of the State's ablest sons, had brought it to a state of high cultivation and fertility. It is in the fork of Salmon Creek and Chowan River. It is indeed "the vale of Avoca where the sweet waters meet."

Here for a generation Dr. Capehart conducted his farming operations with intelligence and skill. He used improved implements. He knew the quality of his soils. He knew the needs of every acre. He built silos. He planted grasses. For years he was a successful stock breeder. He was a lover of a good horse and kept good horses for his own use and for his farm. He was an extensive fisherman. He was one of the pioneers in icing fish and in the use of machinery in hauling his seines. The Avoca Fishery became widely known. The magazines sent special correspondents there and published many illustrated articles about it. The United States Government established a branch of its shad hatching operation there. For many years he was a member of the Board of Agriculture. Here his ripe judgment, progressive ideas and rich experience made him a most valuable factor in bringing the State and its resources before the nation. He had a beautiful home. It was heated, watered and lighted by his own plant. It was indeed baronial in its splendor.

The secrets of his success were energy, industry, hopefulness, good cheer. Just after the war he had faith in the South and he went in debt sixty thousand dollars for farm and fishery. He conquered and left a fine estate.

He was the only son of George Washington and Susan Martha Capehart. He was a dutiful son. No day passed without a visist to his parents. He had three sisters who survive him: Miss Susan Martin Capehart, of Scotch Hall; Mrs. Sophy Martin, of Florida and Mrs. Mary M. Capeheart, of Elmwood. A few days before his death they were all radiant in a family reunion. He was a most devoted brother.

In December, 1879, he married Miss Clara Cotton Bond, of Edenton, N. C. She is a true type of the refinement and culture of that town. Two children with her mourn the loss of father and husband, William Cullen Capehart, who will fittingly succeed the father and Miss C. C. Capehart, who typifies the mother of this family, whose home was the scene of great domestic happiness and splendid hospitality. Dr. Capehart was buried at his home near his kindred, with the ceremony of the Episcopal Church, Rev. J. B. Gebble rector, officiating. His former slaves and their sons bore his body from the hall of their former master and also true friend. More than three hundred colored people were present. A very large number of people attended from Edenton, Norfolk, Windsor and other towns and from Bertie County.

And so at the end of three score and ten this knightly gentleman fell asleep on the watches of the night. His life's account closed after a successful journey. He did his work well. His deeds will speak for him.

The President's Annual Address.

RANDOM NOTES ON THE HISTORY, AIMS AND PURPOSES OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA: BEING THE "PRESIDENT'S ANNUAL ADDRESS" ON THE OCCASION OF THE FIFTY-FIFTH ANNUAL SESSION OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA, HELD IN THE CITY OF WINSTON-SALEM, N. C., JUNE 16, 17 AND 18, 1908.

BY J. HOWELL WAY, M.D., WAYNESVILLE, N. C.

Fellow Members of the Society:—Only the favored few who have been by your kind partiality thus similarly placed can fully appreciate the genuine difficulty I have experienced in the selection of a subject for my remarks to you to-day. A glance at the very elaborate and complete program of papers arranged for consideration at this meeting suggests the pertinent fact that practically every department of medical science and art will be covered by the various essayists who follow me, hence for your President to attempt the discussion of some purely medical theme would be, to say the least, superfluous. Excluding then, as I have done, topics technical or scientific, from serious consideration as befitting the President's address, the field of election is materially narrowed, and after due deliberation I have decided to invite your attention to some random thoughts relative to the history, aims and purposes of the Medical Society of the State of North Carolina.

But before engaging in some observations along these lines I can not forbear again expressing to you my profound appreciation of the honor of presiding over the fifty-fifth annual session of this learned body of near twelve hundred members. The Medical Society of the State of North Caro-

lina is in deed and in truth a great and a grand organization, and our coming together to-day on the historic soil of old Wachovia, from whose sacred precincts have in past generations emanated so many noble and inspiring impulses for the elevating of the moral, educational and sound financial uplift of our great commonwealth, is a pleasing and an ennobling spectacle.

But delightful as is this fine sisterhood of twin cities in a social way, alluring and inviting as are her many attractions, it is not these alone which impel our presence in Winston-Salem to-day. Our coming together in this annual conclave is not without great sacrifice on the part of every one present, but the reason is not far to seek. We are here because we have ideals. Each of us would elevate and uplift higher and higher the professional standards of the medical profession; we would add to our individual stores of learning; we would seek to impart one to another the helpful experiences of the past year; we would gather fresh inspiration for the labors and the toils of our daily vocation of helping to better health, better life, better ideals, those whose all is daily committed to our care. Not one of us has a plan or a practice wholly flawless, nor do we as individuals even hope to evolve such; but in union there is strength, in counsel there is wisdom; thus annually do we find our great body of the elect of the State's great medical profession gathering together at some appointed place and striving for our ideals. And it is well that we do. Much has been accomplished in the past threescore years since the evolution of the times brought this Society into existence; but while much has been done in the past, there yet remains even greater achievements to be realized ere it can be truly said our work is done.

We have before us the examples and the ideals of the men of this body of the past generations, worthy leaders of a noble profession. The eloquent and resourceful Edmund Strudwick, our first President, and his worthy successors, the talented N. J. Pittman, the greatly beloved Will George

Thomas, the brilliant E. Burke Haywood, the accomplished Marcellus Whitehead, the devoted S. S. Satchwell, the learned Thomas F. Wood, the gentle J. H. Tucker, the noble Charles J. O'Hagan, the skilled alienist P. L. Murphy, the physician-patriot Joseph Graham, the erudite Thos. D. Haigh and Chas. E. Johnson, R. L. Payne, J. J. Summerell and their compeers—noble leaders of an erudite profession whose lustrous fame is our most sacred heritage as well as our ever-present stimulus to more exalted ideals and nobler effort!

These noble names are engraved high in North Carolina's Hall of Medical Fame, and yet (if need be, with apologies to the living) I may add that a future generation will place alongside of these fallen leaders of ours, and alike revere the names of the courtly Henry T. Bahnson, the kindly George G. Thomas, the affable Richard H. Lewis, the tried and true friend W. H. H. Cobb, the student Francis Duffy, the careful and precise A. W. Knox, and Robt. S. Young and H. Bascom Weaver and Edward C. Register and genial David T. Tayloe will be remembered as among the strong and forceful men of the profession who have been active, vital forces in the Society for years, graced the presidential chair and exercised a helpful influence upon the profession of our loved State.

It has been observed with apparently much truth that most human progress has been in the main in cyclic movement; an idea is advanced by a few enthusiasts in one generation, rushed to the forefront, where for a time it receives much attention, later it passes to the rear of the stage unnoticed, and later is unceremoniously shuffled off the stage into oblivion, where it quietly rests until rescued by some worker who delves beneath the superficial area where most of us are content to dig. That this axiom is as applicable to medical organization as to other forms of human endeavor does not admit of successful contradiction. Within the one hundred and thirty-two years of our national existence there have been apparently no less than three distinct

periods of activity in the medical profession—three distinct periods when the physicians of the country have shown a manifest disposition to cease their fruitless bickerings, come together and to work for the development of means and measures calculated to enlighten and educate public sentiment in such ways as will help both people and profession, and to impress ourselves *en masse* upon the body politic as possessing those admirable qualities of head and heart for which the individual members of our profession are so highly regarded.

In the period of organizing the various affairs of the only recently detached colonies of Great Britain, there was a great tendency to organize along many and different lines of human effort, and it was a very natural thing that our profession, finding itself cut loose from the mother country and its medical institutions, should essay the founding of medical schools and the organization of medical societies also. Following the founding of the Federal government in the closing years of the eighteenth century, there was organized some five or six medical colleges and about the same number of State societies. Notable among the State medical societies were those of New Jersey (organized just prior to the Revolution), Massachusetts, New Hampshire, Connecticut, New York, and on December 1, 1800, in the city of Raleigh, N. C., there was organized the Medical Society of North Carolina with Richard Fenner, of Franklin, President; Nathaniel Loomis and John Claiborn, Vice-Presidents; Calvin Jones, of Raleigh, Corresponding Secretary, and Wm. G. Hill, of Raleigh, Recording Secretary, with Cargill Massenburg, of Wake County, Treasurer. James Webb, of Hillsboro; James John Pasteur and Janson Hand were elected Censors. Steps were taken to establish at the State Capital a botanical garden, in which it was proposed to cultivate and develop all herbs useful in medicine. Prizes aggregating no less than $85 were offered for the best specimens of opium, foxglove, castor oil, senna and rhubarb. At the meeting in Ra-

leigh in 1802 Dr. Osborne, of New Bern, was elected President. Dr. John Armand DeRossett, of Wilmington, who married a niece of David Hume, the historian, graduated from Princeton and studied medicine under Dr. Benjamin Rush in Philadelphia, is also thought to have been a member of this first State Society. And while the records of the work of this Society are very meager indeed, yet it is known that the medical gentlemen composing it were among the very first men of their times professionally and socially, and it is evident they must have made some impression, for in the revived State Medical Society in 1850 Dr. James Webb, of Hillsboro, was, on motion of the President, Dr. Edmund Strudwick, elected to honorary membership, and his connection with the older Society noted at the time. Dr. DeRossett, then a gentleman retired from active practice and in advanced years, was also elected to honorary membership. Dr. Strudwick, on retiring from the chair, delivered a beautiful oration in which he said, referring to the Society and the profession: "Neither the apathy of friends, the cold neglect and deep injustice of legislation, nor pampered quackery and empiricism can stay its onward course. True medical science will, like the majestic oak, withstand the shock and storm of every opposition. It has been beautifully compared to a star whose light, though now and then obscured by a passing, cloud, will shine on forever and ever in the firmament of heaven." Dr. Strudwick in this address also made reference to the former organization of the State Medical Society and adjured his auditors to "see that we avoid its fate."

While the State Medical Society of New Jersey had been organized in 1766, thus antedating the Declaration of Independence at Philadelphia some ten years, and several other State societies had been organized at later dates, yet the most decided impetus to medical organization in the United States was given by the American Medical Association by its promulgation shortly after its organization of that most remarkable of professional documents known as the "Code of Medi-

cal Ethics." This most valuable and instructive of professional productions remained for more than fifty years, without scarce the "dotting of an 'I' or the crossing of a 'T,' " the universally accepted concrete wisdom of the American medical profession as to the conduct of medical gentlemen in their relations to each other and to the public. It may even be doubted if Dr. Nathan Smith Davis and Dr. H. J. Bigelow, and their illustrious confreres, fully realized how well they builded in the construction of the "Code," but unquestionably its influence in helping to keep medicine a profession and not a trade has been most beneficent, and it may well be argued that this Code of Medical Ethics has wielded an influence far beyond the confines of the medical profession. *En passant,* it is of interest to note that the American Bar Association, the great national society representative of the best interests and standards of the legal profession, has now a committee at work preparing a "Code of Legal Ethics" which is expected to be adopted at its forthcoming session for the "rule and guide of faith and practice" as regards the relations of members of that honorable profession to each other and to their clients.

That the time did come when the strong leaders of the National Medical Organization deemed its revisal the part of wisdom—as they did in 1900 and 1901—is not at all strange. The Bible itself and the creeds of the various religious faiths have, from time to time, been the subjects of critically careful revision at the hands of their friends!

The effect of the organization of the American Medical Association in New York in 1846, along broad and comprehensive lines, the adoption of its celebrated "Code of Medical Ethics," and the wide dissemination given the latter among the medical men over the nation was indeed stimulating and helpful to the cause of medical organization everywhere. The physicians of North Carolina, who were members of the State Legislature which met at Raleigh in the winter of 1848 and 1849, discussed the situation with the

Wake County doctors, and resolved that within themselves, in association with the Wake members of the profession, they would set in motion plans to organize the Medical Society of the State of North Carolina, a Society to be allied with and in operation under the great National Medical Association such as was already in existence in several of the States After several free discussions of the important subject in Raleigh it was decided in February, 1849, to issue an address to the physicians of North Carolina urging the coming together at Raleigh for the purpose of organizing a State Medical Society. Pursuant to this call on April 16, 1849, there came together at Raleigh from seven counties outside of Wake thirteen physicians, which, with the thirteen gentlemen of the Raleigh and Wake profession, made a total attendance of twenty-six in attendance at the organization. While the attendance outside of Wake County was quite disappointing yet, after careful consideration, those present effected the organization of the Medical Society of the State of North Carolina with the following officers:

President, Dr. Edmund Strudwick, Hillsboro; Vice-Presidents, Drs. Haywood, Johnson, Williamson and Thomas; Secretary, Dr. Wm. H. McKee, of Raleigh, with Dr. Wm. G. Hill, of Raleigh, Treasurer.

A two days session was held, during which the recently promulgated "Code of Medical Ethics" of the American Medical Association was reported by a special committee who had it under advisement, and with the elimination of a single item it was adopted unanimously. As indicative of the exceeding high-toned, and, as might possibly be said at this time, ultra-ethical standards of these charter members of our State Society in their fine conception of professional courtesies to each other in practice, it is of interest to note the eliminated article of the "Code." It reads as follows:

"In obstetrical and important surgical cases, which give rise to unusual fatigue, anxiety and responsibility, it is but

just that the fees accruing therefrom should be awarded the physician who officiates."

When I became a licensed physician in 1885 the Transactions of the State Medical Society published the "Code of Medical Ethics of the A. M. A. as its own Code, but a careful review of the Transactions of that body fails to show where or when the eliminated item was restored. I have often doubted if it really was restored, but more than likely crept into the volume in the publishing. Once in it remained unnoticed, until at Hot Springs in 1903 (another half-century as between the 1800 and the 1849 organization of the N. C. State Society) when, again following the footsteps of the parent organization, we adopted the revised Code, or, as it is now called, "The Principles of Medical Ethics" of the American Medical Association.

From the organization meeting in Raleigh in 1849 were appointed as delegates to the A. M. A. Drs. T. N. Cameron, N. J. Pittman and Johnston Jones. Of these Dr. Pittman attended the session in Boston in 1849, a few days after the organization of the State Society. His report to the next session of the State Society of the trip to the meeting, the great national leaders he met there, the important measures discussed, was a delightfully worded production for which he received a vote of thanks from the Society.

At the 1850 session delegates from the newly organized County Societies of Hyde, Beaufort, New Hanover, Edgecombe, Mecklenburg, Piedmont, Orange, Granville, Nash and Franklin were present, and after having the constitution of their societies examined were admitted as members. Thus, as was forcefully directed to our attention by President Knox in his admirable President's address at Hot Springs in 1903. the earliest organization of the present Medical Society of the State of North Carolina rested on the basis of organized local societies. In effecting a reorganization at that meeting, under Dr. Knox's wise leadership, we have merely reverted to primal principles, or in other words building the medical

organization of the State from the foundation upward instead of from the top downward! The division of our present Society session into a House of Delegates and the General Meeting was the inevitable, logical and necessary result of activities which greatly increased our annual attendance. Should future management of the Society's affairs be such as to produce the decline of the County Societies and a diminished interest in the meetings of the State Society, a recurrence to the methods of transacting business as in vogue in 1900 could readily enough be brought about. But the chief business of our annual gathering together being the reading and discussion of scientific papers, and with the wealth of doctors we now have who delight in this work, it is inevitable that the General Meeting should continue to be wholly devoted to such duties. Our House of Delegates, "The legislative and business body of the Society," being made up of the elected representatives of the local profession from every section of the State, certainly gives fairest consideration of business propositions, and in voting in the various elections each unit of our great State organization votes exactly its proper and legitimate strength, thus eliminating the possibility of the men within a radius of fifty miles or less of the Society's meeting place exercising undue control in the Society's affairs.

There is another interesting thought in this connection that I may be pardoned for referring to thus publicly, and it is this: If there exists in the minds of any of our members a yearning desire to participate actively in the "business and legislative work of the Society" (and such desire is perfectly legitimate and honorable when methods used are not open to objection), those members must actively affiliate and fraternize with the members of the local profession in their home County Society, and the wisdom of thus entrusting the affairs of the profession to the members who are active workers for the general good of the profession in their home communities is eminently correct and proper, even if not, as has been hinted at times, wholly approved of by gentlemen who

would participate actively in the "business and legislative affairs of the Society" while not caring to be even connected with local medical organizations with their neighbor physicians. Parenthetically, it affords me great pleasure to observe in this connection that at no time since their reorganization in 1903 have the helpful influences of the numerous County Societies upon the general welfare of the profession been more manifest than in the past year.

The Society meeting of 1850 showed itself fully alive to public as well as professional needs in advising the enactment of State legislation providing for "a general registration law for births, deaths and marriages"; certainly a worthy suggestion and one which after fifty-eight years is still a "long-felt want" in the minds of those who believe in the proper tabulation and collection of the vital statistics of civilized States. At the present hour this remains one of the legacies of incompleted legislation which has been handed down from a previous generation. I trust the State Board of Health will have the cordial cooperation of every member of this body in securing at an early date some much-needed enactments on this line.

The session of 1850 increased the annual dues of the State Society from $3 to $5, and designated a committee to "report on the propriety of establishing a medical college in this State." This committee, without saying why, did not report for two years, and then advised adversely, because "it was feared the best men of the profession would not give up their practice and come together in one place to teach medicine," because it was apprehended that anatomical material could not be secured in sufficient quantity; and further, "because to graduate any but first-class physicians in North Carolina would be to foster a species of quackery." They also deprecated the establishing of unendowed medical colleges. Their report on the "college question" was unanimously adopted, and was strikingly similar to one presented by a committee and adopted by the Asheville meeting of the Society in 1891,

the committee being composed of three young men (W. P. Beall, Frank W. Brown and J. Howell Way) neither of whom were in the least degree familiar with the action of the State Society on the same subject some forty years previously. But the professional sentiment in North Carolina as to medical colleges has undergone a change since then, and to-day good work is being done in North Carolina colleges of medicine. I commend to your thoughtful consideration the suggestion that of the five hundred young men of this State now engaged in studying for the degree in medicine, at least two-fifths of them are at work in our own colleges, being taught the principles and the art of medicine in small classes by competent instructors who stress disease conditions as actually seen in our climate and environs. Without being tedious upon this theme I wish to also note the fact that some of the most promising of the younger members of the profession are to be found among the alumni of our local colleges of medicine. Medical science knows no geographic limitations, yet it is well the profession and the people generally of the State should know the successful work the colleges of medicine are accomplishing in our own State and encourage them with our sympathy and support.

The Society also at the 1850 session passed resolutions urging the National Congress to "adopt measures to improve the condition of the medical service of the army and navy"; also a resolution decrying as reprehensible "the practice of taking care of families at a stipulated price per annum." The distinguished Dr. Chas. E. Johnson, of Raleigh, at this meeting addressed the Society at length "upon the vast difference in the radiating properties of the black and white skins," a topic about which a large volume has been recently written. I refer to these various questions before the State Society fifty-eight years ago as showing they were thoroughly alive and alert as to professional conditions and needs in both State and nation.

The influence and prestige of the State Medical Society

grew from year to year, but not without earnest and painstaking effort on the part of those entrusted with leadership in its affairs. In 1852 a committee of Drs. J. H. Dickinson, J. Graham Tull, S. S. Satchwell, Chas. E. Johnson and Will George Thomas, as chairman, issued a "General address to the physicians of North Carolina," urging their duty to assist in the organization and enrollment of all practitioners of regular medicine of the State in the County Societies. In this "Address," penned by one of the State's most gifted sons and talented physicians of that century, occurs the following language: "Take the earliest opportunity to join the local medical society, attend its meetings and freely participate in its proceedings," and later on he says:

"It is useless to argue this matter further. It is by the magic power of associated effort—the grand idea of the present age—that existing evils and errors in the profession can be most effectually eradicated, and hence the vital importance and necessity of these medical societies. It is to the unity of design and concentration and power of action, which association in a common cause gives, that all the arts, sciences and occupations of life are greatly indebted for the rapid strides they are making. It is giving a mighty impulse to the human intellect, as seen in the wonderful progress of the physical sciences, education, mechanics, commerce, agriculture and the various benevolent and religious institutions of the country. It is by it your railroads are built, your banks established, your laws are made and maintained; and the very government under which you live is but the result of associated effort; it is the lever of Archimedes by which our own injured but humane and beloved profession is to be elevated."

These are forceful and vigorous words of Dr. Thomas, and it may well be questioned if in the various and sundry dissertations, lectures, etc., the profession has listened to of late years on this vital topic of medical organization there have been uttered more trenchant and eloquent phrases.

The State Society with such magnificent leadership con-

tinued to prosper greatly, and at the session of 1860 forty County Medical Societies were represented and a maximum of membership reached; but the blighting influence of fratricidal strife and the horrors of internecine war swept over our fair Southland and it was as late as the year 1881 ere the State Medical Society had as large an enrollment of members as it had in 1861. And I may add its percentage of enrollment of the active practitioners from among the ranks of the graduated physicians of the State was actually greater in 1861 than it was in any year afterwards until 1904, or one year after our reorganization at Hot Springs.

Dr. Alman Holmes, of Clinton, N. C., reported an ovariotomy done in 1858.

Dr. Chas. E. Johnson, of Raleigh, in 1869, published his treatise on "Insanity and its Medico-legal Relations," dedicating it to "the members of the Medical Society of the State of North Carolina as a slight testimonial of respect for the talents and patriotism which induced you, 'a gallant few,' to step forward in the work of medical reform in North Carolina; of esteem for those steadfast virtues, courage and industry which caused you to press forward amid the greatest discouragements, and almost defeat, in fact, to perform the tasks of hope in the midst of despair, and of acknowledgments of disinterested friendship and for honors conferred."

In 1872 a committee of the Society formulated the basic principles of the State Pharmacy Law as related to the sale of poisons, and later secured its enactment by the Legislature.

Since the adoption of the Constitution in 1849 the Society has revised its organic laws at various times. In 1850, 1853, 1854, 1868, 1880, 1888, 1891 and in 1893. In the latter year mention of the County Societies was left out, and members were elected direct by the State Society without being members of or connected in any way with County Societies. All reference to Delegates from County Societies was omitted in the revision of 1893.

In 1903 the present Constitution, fashioned after the old

original Constitution of 1849, with County Societies as its basis and in harmony with the recommendations of the American Medical Association, was submitted to the Society at the Hot Springs session by a committee of Drs. J. Howell Way, Jas. A. Burroughs, M. H. Fletcher, Geo. W. Pressly and H. A. Royster, and after a free discussion unanimously adopted.

Most of the revisions have been limited to minor matters, only three vitally different Constitutions having been in existence since the formation of the State Society in 1849—those of 1849, 1893 and 1903. And I may add those of 1849 and 1903 are very similar in both design and purpose, each being based upon County Societies; only the latter dividing the Society for good and sufficient reasons into two bodies, a business and a scientific section.

The State Board of Medical Examiners.

The idea of having a State Examining Board of Licensure for physicians took deep root at an early period in the history of our Society, and for several sessions unsuccessful efforts were made to induce the Legislature to enact such a measure, but without results, until February, 1859, when practically the present medical practice act was made a statute of North Carolina. The penalty clause was added in 1885, and the registration clause in 1888. In the original law the board met annually on the first Monday of May, alternating each year between Morganton and Raleigh. The privilege of electing the Board of Examiners was vested in the Medical Society of the State of North Carolina, as at present, but an added clause read "except when the Legislature chooses to exercise this right." At the Society meeting in 1869 a committee was appointed to petition the Legislature to allow the "Board of Examiners to meet at the same time and place as the State Medical Society," which request was made the law.

At first a full board of seven members was elected for a term of six years, and at each of the five succeeding sextennial periods a full board was elected for the term of six years each

until in 1890, when it was deemed advisable not to elect an entirely new board at each election, and three were elected for six years, two for four and two for two years, respectively. Very soon the Society again experienced a change of mind relative to this and decided to return to the full term of six years for each member of the board, and as rapidly as it could be worked out without changing the terms of the incumbents the former method was restored, and in 1902 a full board of seven was elected for six years, whose official terms all expire at this session. This necessitates an election at this session of a new State Board of Medical Examiners, a responsibility I am sure the Society will discharge in the General Meeting on the second day of the session with fidelity to itself and due regard to the vital interests entrusted to its care.

In this connection I digress a moment to remind you that the cases of the State v. McKnight and the State v. Biggs yet remain matters of record in our Supreme Court decisions, unreversed; and in addition thereto rests undisturbed upon our statute books, the iniquitous medical sectarian legislation enacted during the session of the Legislature of 1906-7, whereby the entering wedge for the disintegration of our medical license laws was made in the creation of a special Board of Examiners for a certain sect of practitioners. There is absolutely no more excuse or reason for the existence in North Carolina of a special Board of Medical Examiners, to examine and to certify to the professional capacity of medical practitioners of electro-therapy, or hydro-therapy, or rhinology, or opthalmology, or any other special method or theory of practice, than there exists the necessity of a special examination before the Supreme Court of attorneys applying for State license, upon particular methods of professional procedure in practice about which even the best lawyers may have diverging views, in land titles and conveyancing, or railway practice, or criminal procedures. Hence I must say I deem it the duty of every high-minded practitioner of medicine in our State to feel there yet exists a stigma on the science of medicine in

North Carolina, irremovable, until the last vestige of sectarian medical practice legislative enactment is erased from our statute books, and all individuals essaying the practice of the healing of sick men and women and children are required to stand the same examination upon the formation, nature, character and diseases of the human machine they propose to treat when its physiologic function is disturbed. Minor differences of method in practice or theory of the same are immaterial, and should never have been permitted serious consideration by the law-makers, and the fact that such legislation was ever enacted for the benefit of less than a couple of dozen practitioners, constitutes a monumental disgrace to our alertness, and affords a most striking illustration of how easy it is to secure ordinarily special legislation if only active and insistent.

From this experience we should take warning and in future years have the profession in the County Societies fully and early advised of all such improper attempts at medical legislation in order that they may have the opportunity to exert the proper influence upon their home members of the legislative body.

Preliminary Education for Medical Students.

This vital subject has engaged the attention of this Society for more than fifty years, and is still in an unsatisfactory condition, but we should institute active efforts to secure its early and correct adjustment at the hands of the next session of the State Legislature. With a medical college course of four years professional training, and the added fifth year of practical hospital work, which more than a third of the recent medical graduates are securing ere they begin practice, the lamentable fact yet remains that from twenty to thirty per cent of all applicants for State license in North Carolina fail in their examinations, and the percentage of rejections remains as high as it was fifteen and twenty years ago. That our excellent board is rejecting more applicants than it should

properly do I do not for one single moment believe. Always the personnel of this board is high and its members actuated by conscientious purpose to perform its laborious duties for the best interests of the public. But there is something radically wrong in that the percentage of rejections continue so high; and an experience of several years as a member of that body, participation in the examination of some hundreds of young physicians, a critical study of the records of the board from 1859 to date, coupled with observations of similar work in other States, convince me that our State Board of Medical Examiners is only doing its duty in rejecting so large a percentage, and that the remedy is not in their hands but in ours to secure at the hands of the Legislature added enactments prescribing a standard of entrance requirements for students of medicine matriculating in the medical colleges of this State, and also apply it to all physicians applying for examination for State license in North Carolina. The adoption by our law-makers of such measures would immediately serve notice upon the young men of this and other States that they must fit themselves to begin the study of medicine before doing so, else they will have difficulty in securing license to practice. Of course efforts to secure such added legislation would encounter the usual pleas of consideration for the young man of limited means, etc., but I am convinced that a careful study of the experiences of our board with educated and poorly prepared applicants, and a proper appeal to the intelligence of our legislators, would result in the needful addition to our statutes, thus adding the crowning complement to the statute of 1859. I commend to your careful consideration this matter, and suggest a careful rereading of the President's address to this body in 1906, in which address the subject was most intelligently discussed.

Our Relations to the American Medical Association and Its Journal.

Receiving from the great National Medical Association, as it appears North Carolina physicians did receive, the impetus

leading to organization of the State Medical Society in the few years following the promulgation of the Code of Ethics. it was most natural that our State Society should have felt kindly inclined to the A. M. A., and it is very evident from an examination of our early records that up to the time of the War of Secession the relations between the two organizations and their members were most cordial and sympathetic.

In the post-bellum period there was a disinclination on the part of our State Society leaders, or apparently such was the case, to have much to do with the affairs of the National Association. I may be permitted to observe that I have thought there was still in existence a bit of this same sentiment, though not so strong and assertive as formerly. Meanwhile the A. M. A. leaders have manifested a pleasingly truly national spirit, each of our sister States, Virginia and Tennessee, have had its presidency within the past three decades, while its honors and its opportunities (with the single exception of the Vice-Presidency, which most worthily fell upon the great O'Hagan a few years before his death—and Tennessee has had that again since then) have gone to other States whose profession possessed no greater ability than ours, but whose leaders were more in sympathy with the work of the National Association.

When we fully realize the truly great and beneficent labors for the elevation of professional work and standards along so many different lines in which our great American Medical Association is at the present time very properly engaged, our attitude can but be one of sympathy and support, for who can better or so well do this work than the properly accredited representatives of the great organized national medical profession? And it affords me much pleasure to here record the fact, as such I believe it to be, that the very great majority of the reading, thinking members of our profession in this State are in hearty sympathy and cordial accord with the numerous lines of advanced professional effort now engaging the attention of the leaders of this great National Association.

While only a decade past there were scarce two-score of physicians in our State who were members of the A. M. A., and they were in the main residents of a certain section of the State, it is suggestive of another milestone of progress passed to note that the present membership of the National Association in North Carolina is almost actually equal to the entire membership of the State Society six years ago. And its great weekly journal, one of the most ably conducted and admittedly the most widely circulated and read of any medical journal on the face of the earth, is found paying its weekly visits to the offices of almost one-half of the members of this State Society. This is as it should be, for, while there will always be an appropriate and a fertile field for the privately owned medical journal, the necessities of the times imperatively demand that an organized national profession shall keep certain matters of concern before the guild and conduct certain lines of general work for the profession at large, and in the proper development of these things a great national medical magazine published at frequent intervals is a necessity. Differing as I may and have done at times with the policy of the present management of the journal of the A. M. A., I must in simple justice to all concerned say the American Medical Association and its great journal is successfully accomplishing things for the betterment of the profession and the people of America—and things which without a great organization like it could never by any possible means be done—and it merits and should receive the earnest support and practical assistance of every member of our profession in this State.

Medical Journalism in North Carolina.

From the organization of our State Society in 1849 to date our Annual Transactions have been issued in one annual volume. At first this was only a modest pamphlet of a few pages; later it evolved into a stout volume with paper covers; still later it assumed the dignity of a well-bound volume, and in later years the prolificity of our membership had necessitated the issuing of a portly and massive octavo. This

method of publication of our Transactions can, it is very doubtful, ever be improved upon. Certainly a neatly bound volume is cared for more and preserved with far greater certainty than would monthly issues of a State journal of medicine issued by our Society, and I have but to commend the wisdom of our Society in adhering to our original plan of publication rather than embarking on the dubious experiment of attempting to run a State medical journal, as is being done with more or less success by several of our sister State Societies. A glance at the progress of medical journalism in North Carolina is of interest in this connection.

In 1856, just seven years after the organization of the State Medical Society, an agitation began in the membership for the establishing of a North Carolina Medical Journal, which could also print the transactions of the Society in its pages, and 125 subscriptions were obtained. The whole matter was referred to Dr. Will George Thomas for report to the session of 1858. At the same time Dr. Edward Warren was elected editor in the event sufficient subscribers were pledged to sustain the undertaking. In 1858 Dr. Warren reported the securing of 300 subscriptions, but still lacking at least 100 regarded as essential to success, he advised against undertaking the publication and tendered his resignation as editor. After considerable discussion Dr. Warren was continued as editor, and the Society pledged its financial support to the extent of defraying the necessary expense of the *North Carolina Medical Journal,* which was thus launched upon its career of future usefulness and helpfulness to the Society and the profession in this State especially. In 1860 Dr. Warren was succeeded as editor by Dr. Chas E. Johnson, of Raleigh, who with Dr. S. S. Satchwell, of New Hanover, conducted the *Journal* until November, 1861, when its issue ceased. After the spring meeting of 1861 the State Medical Society did not meet again until June 6, 1866, at which time it was advised of "the entire loss of the books, accounts and other equipments of the *Journal* during the occupancy of

Raleigh by the Federal troops." It promptly levied an assessment of $4 on each member to pay the debts of the *Journal* and recommended its revival. The following year the assessment was placed at $3, but it was several years ere the entire "war debt" of the *Journal* was paid. In the meantime the State Society continued, as it has wisely on to the present day, the admirable system of issuing an annual volume of Transactions more certain of preservation and ready of reference.

In 1877 Dr. Thos. F. Wood, of Wilmington, with Dr. M. J. DeRossett, revived the *North Carolina Medical Journal* as a private enterprise, and while conducting it from then until the time of his death, the *Journal* was never again the property or the liability of the State Society, whose only active interest in it was a vote of confidence making it the Society's "official organ," and wishing its distinguished editor every success. Dr. Thomas Fanning Wood was one of the greatest physicians North Carolina or the nation has ever produced—a man of rare and varied attainments, an incessant worker and an indefatigable investigator, a learned botanist, a scientific pathologist, a skilled practitioner of medicine greatly beloved by his clientele, a wise and efficient organizer of men and things, a talented and versatile writer, and with all these accomplishments he was, best of all, a most accomplished and lovable Christian gentleman without taint of cant or hypocrisy in his thought, word or deed.

Under his able editorship the *North Carolina Medical Journal* soon became an established institution of medicine in North Carolina, and I do not exaggerate when I say its helpful influence extended beyond the confines of the State and of the nation alike, and its brilliant and lovable editor became favorably known in every clime where English periodicals were read. Its book reviews were of rare and notable excellence, surpassing in thoroughness of analytic conception and critical review those of every other English speaking State or nation except two, the *British Medical Journal* and

the old *American Journal of the Medical Sciences.* For a number of years prior to his death in 1892 Dr. Wood enjoyed the valuable editorial assistance in the work of the *Journal* of Dr. Geo. G. Thomas, who contributed greatly to enhance the usefulness and success of the periodical. Subsequent to Dr. Wood's death in 1892 the *Journal* came under the editorial control of Drs. J. Allison Hodges and Robt. D. Jewett, who successfully managed its affairs until its removal to Charlotte several years ago, since which time it was conducted by a staff with Drs. W. H. Wakefield, J. D. Roberts, H. A. Royster and W. O. Nesbit, editors. In 1901 the relationship of the *North Carolina Medical Journal* to the *State Medical Journal* as "the official organ" was, by vote of the Society, abolished. In 1908 it merged its identity into that of the *Charlotte Medical Journal,* and the two journals are now published and known as the *Charlotte Medical Journal.* In 1892 Drs. Edward C. Register and John C. Montgomery, of Charlotte, began the publication of the *Charlotte Medical Journal,* Dr. Montgomery retiring some ten years later. Starting out the *Journal* essayed the task of not only being a first-class North Carolina State Medical Society journal, giving much consideration to the special affairs of the profession in this State, but aspiring as well to become the leading exponent of Southern medical literature. A comparison of the make-up of the various journals of the Southland, with a look into the American Newspaper Directory, will at once satisfy the curious that both ambitions have been accomplished by its talented editor. A strong and influential leader of the profession in his city and State, it has been the pleasure of this Society to honor him at various times and in divers ways; he has never sought for his *Journal* the endorsement of the Society as "its official organ," or other adoption at our hands; hence it is pleasant to here note that its columns and its editorial pages have alike, at all times in devotion to the interests of this Society, rivaled that of any of the state society-owned journals; and this friendly assistance and support has been

freely accorded without price or Society financial liability upon our part. During the present year the merging of the old *North Carolina Medical Journal* in the *Charlotte Medical Journal,* with the added interest and energy of the older publication, we have the satisfaction of knowing our State is leading the Southland in the realm of medical journalism.

The State Board of Health.

Like the State Board of Medical Examiners the North Carolina State Board of Health is the legitimate child of this Society, and as such well deserving of the fullest support and consideration at our hands at all times. For several years prior to 1877 the Society discussed the advisability of securing legislation establishing a State Board of Health, but the Legislature declined to enact the needful statute or make the all-requisite appropriation. In that year, however, the efforts of the Society's committee succeeded and the Legislature of 1877 made an appropriation of one hundred dollars for the use of the board, and authorized the State Medical Society to assume the functions of a State Board of Health for North Carolina. This duty the Society prepared to discharge by electing a board at the session of 1877 which was promptly organized by the election of Dr. S. S. Satchwell, President, and Dr. Thos. F. Wood, Secretary and Executive Officer. Two years later the Legislature decided to have the Governor select a portion of the State Board of Health, and this bipartite responsibility has continued to be discharged conjointly by the Governor and the Society in harmony.

The appropriations have been increased from time to time, and while not as yet sufficiently large to enable the board to accomplish the work desirable to be done, yet it is very doubtful if the State of North Carolina receives so large returns in practical value for any of its money appropriations as accrue from the work of the State Board of Health. At the same time, while felicitating ourselves upon what has been done, it is emphatically advisable and our professional duty as well,

to bear in mind that much more work is needed in this State by the Board of Health and along other lines of effort before the opportunities afforded us to help promote the public health will be met as completely as the knowledge of modern medicine enables us to go, or as fully as other States are working on lines of public health just now. Take as a single illustration the monthly "Bulletin" of the State Board of Health. An enlightened legislative conscience should promptly provide means to enable it to be developed into a popular journal which would seek to educate both doctors and public in the principles and practice of modern public and private hygiene. It should have a wide circulation and contain articles on popular scientific medicine, which would serve the useful purpose of affording our people the opportunity of securing some knowledge of real modern medical science, thus serving to effectually antidote the vagaries and inaccuracies not to mention the downright and palpable untruths circulated among the laity through the newspapers, through pseudo-scientific magazine articles the "patent medicine" almanacs, *et id genus omne*. If the Department of Agriculture issues periodical information relative to the plant and animal diseases, why not a Department of Health, supplied with ample funds to do at least as much for the betterment of the human body?

On other lines we need work, and we need money to do it with. The sister States on either side of us are appropriating public funds with much more liberality to the development of their State Boards of Health work; and, gentlemen, I point it to you as one of your professional publicist duties to cultivate a public sentiment which will demand such action at the hands of our legislators even though the levy for State purposes should exceed forty-three cents! Respect and reverence for the memory of a great and good man, Dr. Thos. F. Wood, will not permit my passing from the consideration of the work of the State Board of Health and our relation thereto, without referring to the fact that from its first inception until

the day of his death in 1892, he continued its active, zealous working Secretary, building something where nothing had been before, and leaving us the heritage of a rich example fruitful with great accomplishment. His mantle fell on most worthy shoulders in the person of our present estimable Secretary, Dr. Lewis, who has for fifteen years past been building on the foundations so well laid by Dr. Wood. But it is well for us all to bear in mind the fact that as yet the actual work of our State Board of Health as related to the magnitude of the problems before it, is but merely begun, and its successful development and realization hold many problems for the future to solve, and in their adjustment the membership of this Society will naturally exercise most vital parts.

Honorary Members and Honorary Fellows.

I would respectfully call your attention to the fact that while our Constitution provides for Honorary Members and Honorary Fellows, that none have been elected for a number of years past. The list of Honorary Fellows, which stood at twenty-one, the maximum of attainment during our history, some ten years ago, has had no additions made to it, while deaths have reduced it to fifteen members. Certainly this list, which is composed of members of the Society "who have been members of this Society continuously for thirty years, and whose dues have been paid during that time," should be added to at this session and their names appear at the proper place upon our "roll of honor" in the forthcoming volume of Transactions.

The attention of the House of Delegates is invited to this matter of simple justice to those who have borne the burden and heat of the day for the score and a half of years past, and whose general standing and professional attainments warrant this vote of confidence and esteem by this Society.

Deaths During the Year Past.

Since the annual meeting of this Society at Morehead City in June, 1907, twenty-three members of the component

County Societies of this body have completed their earthly course and passed into the presence of the Great Physician above. Our Obituary Committee will during the session render fitting report thereon. In our necrological list for the year will be found the names of three distinguished former Presidents of the State Society.

Dr. Joseph Graham, of Charlotte, was a member of the State Board of Medical Examiners from 1878 to 1884, and presided over this Society at the thirty-third session, held in New Bern in 1886. He was most highly regarded in the city of his life-work, as well as throughout the State, and appreciated as a wise and learned physician as well as a useful and patriotic citizen.

Dr. Thomas D. Haigh, of Fayetteville, was a confrere of Dr. Joseph Graham's on the State Examining Board, serving alike with him the six-year term from 1878 to 1884. Dr. Haigh was elected President of the Society at the Charlotte meeting in 1887 and presided at the session in Fayetteville the following year. A handsome, scholarly gentleman possessing a cultured mind and thoroughly grounded in the principles of his chosen profession the success that came to him was but his merited reward.

Dr. Patrick Livingston Murphy, of Morganton, served the State and the profession as a member of the Board of Medical Examiners from 1884 to 1890, and at the Winston-Salem meeting of the Society in 1896 was honored with the Presidency of the organized medical profession of his State, occupying the chair at the Morehead City session in 1897. But his great life's work by which his name will be best remembered in North Carolina during the generations to come, was his successful labors in caring for the mental unfortunates of this State during the quarter-century of his incumbency of the Superintendency of the State Hospital for the Insane at Morganton; a record of which every citizen as well as physician of this State is justly proud, and one which will remain a permanent part of the State's history so long as the

duty of the strong helping the weak is a tenet of our civilization.

It was my good fortune to know personally each of these three eminent Carolina gentlemen and physicians, and reviewing at this date their professional careers I am most profoundly impressed with the great love and genuine heartfelt affection each of them bore this Society, and the confidence they cherished in its influence and work in the upbuilding of professional characters and standards in North Carolina. Regular attendants upon its annual meetings, active and interested participants in its every work, firm believers in the exalting and ennobling influences emanating from professional contact, faithful exponents of the best in our art, their labors are ended and their records on earth completed. In the coming years no history of North Carolina men of medicine will be complete without the names of Graham and Haigh and Murphy. Immediately following the notice of the death of each of these distinguished physicians I communicated with their respective families and agreeably to them arranged for the preparation of a suitable memorial of each, which will be presented to you during the session.

In conclusion, permit me to express my thanks for the kindly patience you have exercised in listening to these random observations of mine relative to the Society, whose every interest is dear to every one of us. She needs no encomium at my hands, no praise or eulogy from yours; but service, work, enthusiasm in the cause of scientific medicine, faithful and loving devotion to higher ideals and loftier conceptions of the true physician's life—these are demanded of each of us. These we must exemplify in our lives if we are to prove worthy successors of the noble men of the past whom I have referred to here to-day. And these sacrificial offerings we shall bring to the altar of the grand old Medical Society of the State of North Carolina in fond anticipation of exalting her ideals and her standards as the years pass on. I thank you gentlemen, I thank you.

The Annual Oration

THE PHYSICIAN AND EDUCATION.

BY CHARLES S. MANGUM, UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL, N. C.

The doctor's degree is bestowed by institutions of learning in recognition of the highest attainment in some special line of endeavor. The one receiving such a degree assumes with it an obligation to maintain a certain standard of excellence so that nothing he may do or may leave undone shall tend to cheapen this badge of his efficiency. Each man's life, when his work is done, will show in what manner he has lived up to this obligation; and it rests entirely with those who bear the degree of doctor of medicine to command respect for and confidence in their title among intelligent, thinking people.

In the past the obligation has been more than fulfilled, as the names of a host of the world's most famous men will testify; for the medical man of history, by his wonderful achievements and unselfish devotion to duty, has made of the title he bore a badge of honor. The responsibility for the present and the future is upon our shoulders.

Some of us are ripe in years and already crowned with honors; some are bearing the brunt of the day's work; while others look forward with all the enthusiasm of youth to the opportunities of the future; but all must wait for the judges of to-morrow to place us in a niche of fame or upon the long roll of those who have tried and failed.

If we are to live up to our heritage and retain the position of preeminence won by our predecessors, it behooves each one of us to do his full duty and strive for lofty ideals of service and true manhood, whether our sphere of action be great or small; for the life-work of the lonely physician, isolated from all of his kind, is just as noble and often as far-reaching in

results as that of his more fortunate brother, who dwells in an atmosphere of medical research and in constant touch with master minds. Though we work as individuals, we should never lose sight of the fact that our actions make for the honor or the discredit of the profession to which we belong. *We* have been trained to solve the problems and to do the work of the present, and the body of men before me is evidence that the work will be well done.

But the young men and women who are to fill our medical schools during the next few years will take up our tasks where we leave them, and upon their shoulders will rest the responsibility which now belongs to us. The problems they will have to face and the remedial agents they will have at their command are beyond the gift of man to foretell. It is our plain duty to see that they are prepared to assume this responsibility. Man's insistence that nature give up her secrets is becoming greater with every year, and as thought and research add to the sum of human knowledge the medical profession must keep pace, for the sick man will always insist upon his right to receive the benefit of whatever will prolong life or relieve suffering.

No one's daily vocation takes him through so wide a range of human knowledge and experience as the doctor's. It is difficult to conceive of any knowledge that he can not turn to practical account. The curriculum of the modern medical college covers almost the entire field of science, with the exception perhaps of geology and astronomy, and who would dare say how long these two may remain unattached.

The effort to meet the demands of scientific progress has caused us to forget and to neglect one of the fundamental principles of education, which is *"progression."* The outcome is a condition of affairs in which the student finds himself helplessly wandering in a labyrinth of tasks, for which all too little time is allowed, and which he must undertake without previous training sufficient to develop the manual dexterity and the power of scientific reasoning which are necessary for their accomplishment.

If a teacher of mathematics were to take a pupil from a class in arithmetic and require him to master the calculus, one could hardly expect the pupil to distinguish himself; and yet this well illustrates the conditions in many of our medical schools.

The consequence is that even the brighest men are apt to acquire a mere smattering of many sciences, but a deep and abiding knowledge of none; while many a man who might have become an honor to his profession is overwhelmed with discouragement and gives up the hopeless task.

We can not stop. We can not be content with what we are or what we have been, great and glorious though this may be. The progress of events is not in our hands to control. The very nature of our mission forces us, whether we will or not, to the very forefront of scientific achievement. If we are to fulfill this mission in the future as we have in the past, it is incumbent upon us to see that those whose preceptors we are shall receive such training as may fit them for the work of the future, so that "what the father found glass and made crystal, the son may find crystal and make pearl."

The greatest weakness in the present system of medical education may be found at its beginning. Students, whose training has in no way fitted them for the courses prescribed for them, are permitted to begin the study of medicine, only to realize when too late the immense advantages of which they have been deprived. And it is our fault, for they are in ignorance of what is before them, while we know.

The day has passed when the mere collection of a mass of facts may be considered a medical education. The intelligent patient demands that the physician shall be able to reason, and that he shall be trained to think logically and to reach accurate decisions before he is granted his license, and not leave too much to be learned through *"experience."* The patient and long-suffering public is beginning to rebel at the consequences involved in its share of this *"experience"*—so valuable to the young practitioner.

The American Association of Medical Colleges, realizing the present weakness and foreseeing the future needs of the profession, has sent out a call to all medical schools to take a step forward in the elevation of the standards of medical education, and require of their matriculates such previous training as may enable them to pursue their studies with a greater degree of thoroughness and some hope of larger results.

This is no young man's movement, but one inaugurated and led by the oldest, wisest and most experienced thinkers in the profession. From all over the land the schools, and among them those of North Carolina, have responded to the call, and now they look to the profession, whose servants they are, to uphold and approve, for no public health movement in a State can be of greater importance than that directed toward securing high standard medical men. The public demands of the doctor that he repair the maimed body and prevent or cure disease and our teaching, our thoughts, our councils all center upon this paramount duty.

But the mission of the doctor goes further. One of our great teachers has said that "a physician may possess the science of Harvey and the art of Sydenham, and yet there may be lacking in him those finer qualities of heart and head which count for so much in life." Unless a physician realizes that his patient is not a mere pathological problem, but a fellow-mortal, endowed with all of human nature's weakness and frailty, and can judge with charity and temper his ministrations with something of human kindness and sympathy, he misses what is highest in his calling and becomes a mere mechanical device to be catalogued and called upon only when unavoidably necessary. The old family physician, who may within a few years, if the present regime continues, be known only as a character in story or legend, owes his position of trust and affection less to his professional skill than to his qualities of heart and head, which make him both counselor and friend.

The modern student of medicine, working with science, in

science, for science, is in danger of becoming callous to all feeling of sympathy until he comes to look upon poor human flesh as a mere adjunct to the laboratory, a never-failing field for fresh problems, and without the findings of the post-mortem the solution of the problem is never complete and the requirements of science remain unsatisfied.

Let us hope that it may never become unscientific to get well. As we mould the growing mind, or labor to increase our own efficiency, we should never lose sight of the ethical and the humane, but strive for knowledge, not only of disease and its cause, but of ourselves.

The physician's interest in education is not limited to the making of medical men, for ignorant obstinacy and superstition are more powerful enemies even than the diseases he combats. Without an intelligent public, realizing and appreciating the value of health laws, the doctor is handicapped in his work and his best efforts often rendered futile. The law-makers have realized this and have required that the school children shall be taught the principles of physiology and hygiene. The school-teachers of the State, with a devotion to duty so characteristic of their calling as not even to excite comment, have undertaken the task, but few of them have had opportunities to fit themselves for the work, and hence the results have not been satisfactory. Every physician should be a teacher in his own community. Give to your school-teachers who have in their immediate care the training of the children the advantage of your practical knowledge of physiology, infectious diseases, and the laws of hygiene and quarantine and you may safely leave the rest to them. We will have in another generation a citizenship that will be an ally and not a hindrance to the health officer, and will do more to elevate the standards of public health in our State than all the laws ever passed.

North Carolina possesses a State Board of Health which is both energetic and efficient. Through their efforts a great deal of helpful legislation has been enacted, and through their

publications and their personal teaching the people have been put in possession of much useful and practical knowledge. But North Carolina's unofficial board of health should comprise every man or woman who possesses a license to practice medicine, and not until this is so can the wise plans of our leaders bear full fruit. Health laws are not uniformly enforced, nor can they ever be until the people are taught simple medical common sense, and the responsibility for this rests upon the individual members of the medical profession.

Now, Gentlemen of the Medical Society of the State of North Carolina, let us go back to take up again the day's work, fully resolved to be true to our heritage and give to our children something better and higher and nobler than we ourselves have received, and by thus adding to the sum of human happiness build for ourselves monuments of living stones.

The Annual Essay

THE LINES OF PROGRESS IN THE PRACTICE OF MEDICINE.

BY DR. THOS. R. LITTLE, GREENSBORO, N. C.

On the title page of a certain treatise on the "Practice of Medicine" are to be found these significant words:

"Is an arch, where through gleams that untraveled country whose margin fades forever and forever as we move."

To every one who has with some sort of conscience set himself to learn something of the art's vast evasiveness, it must often appear that its hither margin fades with a rapidity out of all proportion to his most eager movement in pursuit; yet the faithful investigator is not "following a wandering fire," nor grasping at a mere bauble which will turn to "dust and ashes in his hand."

By no means an exact science, and not destined to become such, for this very reason the field of medical research holds out to the scientist promise of such reward as is not to be attained by investigation along the lines of a fixed and unchanging science.

Looking back from our present advanced position upon the state of medical knowledge a hundred years ago, we can but feel that most of our predecessors of that and earlier days must have considered their art to have reached the zenith of its development.

For centuries there had been practically no advance in curative medicine. Since that time the rate of progress has been so rapid and changes in method so numerous and profound that of the therapeutic structure of that day there is scarce left one stone upon another. Gathering momentum as it came, the forward movement, nevertheless, had not yet attained its full force until some twenty years ago. Since

that time it has been truly said that there has been more real progress in the practice of medicine than there had been in the twenty centuries immediately preceding. The same statement is literally true of the special domain of surgery.

It is true that during the "dark ages" of medicine, great men of splendid intellect had arisen from time to time in the medical profession, and in many instances showed a prescience nothing short of marvelous in near approach to solution of problems which puzzled all their successors until the white light of our day penetrated their inmost recesses, demonstrating at one and the same time the vast possibilities of present day science and the wonderful acuity of our fathers. Still, largely through lack of those external aids and appliances which other sciences have given us in recent years, they fell short of complete attainment and so failed to give to the world discoveries which, when finally evolved, gave to the practice of medicine a new meaning and made desert places to rejoice.

In the very dawn of medical practice as we know it, the master, Hippocrates, established a method which, although sometimes discarded by those who followed, and almost lost sight of in the effort to found systems based on other theories, is to-day the rock bed of learning for those who would know the inmost truths of the healing art. His simple doctrine of critical observation combined with common sense, and deductions therefrom, lives to-day and grows steadily stronger, although his humoral pathology has finally passed away—not, however, until it had held sway well-nigh two thousand years.

Until the time of Jenner's immortal discovery, the medical mind of the world had studied and worked and delved, eternally possessed by the futile dream of applying to each disease, each symptom, its specific drug,—groping out into the darkness toward that longed-for day when, this process being complete, there should be no more sickness or death. To what extent success had followed centuries of faithful and persistent efforts along these lines, we need not go far to see.

Two drugs possessing truly curative qualities for two diseases they knew and used more than one hundred years ago. This represents the sum total of results following twenty centuries of research along the line of curative drug therapy.

In view of this fact, how is it that curative medicine has made such phenomenal strides in the last century and especially in the last three decades? It is that since the realization of the marvelous effects of vaccination against smallpox, medical scientists have finally aroused themselves from that dream of a drug Utopia, and have turned their awakened intellects upon lines of investigation which soon led to results no less astonishing to their profession than to the world at large which became the beneficiary of their genius. That thought germ which finally grew into Edward Jenner's world-blessed prophylaxis was the promise of a new era in the practice of medicine. The application of his God-given idea is a simple commonplace to-day; but conceive if you can what it meant to evolve *de novo* such a plan and to carry it to a successful issue in the face of such violent passion and prejudice as has seldom been accorded another of the most beneficent boons gratuitously bestowed upon man. To appreciate Jenner's situation we may recall that now, after a hundred years of successful demonstration, vaccination is frequently assailed, and numerous lawsuits resulting from its enforced practice attest the fact that mankind will not accept even *a blessing* except upon their own terms.

It is said that toward the end of the eighteenth century every tenth person in England bore the badge of smallpox, while hundreds of thousands had perished in successive epidemics of the dread scourge. By a partial and imperfect application of vaccination the civilized world has been practically freed from its ravages, and we know it now as a mild affection, easily controlled. Nevertheless, its continued *existence* among us is a reproach to governmental intelligence. In the entire German Empire, under compulsory vaccination, during the year 1906 there were but 26 cases of smallpox

with five deaths, and these cases, without exception, were imported from other countries. Great as has been the result of Jenner's patient work in its *direct* benefit, it is trivial compared to the *sequences* set in motion by this first step toward modern medicine. For years, it is true, further advance was apparently slight and insignificant, but the leaven was at work and finally results appeared which fully compensated the long period of sterility.

The world was still fighting malaria with one of the two known specifics, and this disease was being partially restrained, but great as was the benefit of quinine to malaria-cursed countries, its effects are poor and inconsequential indeed compared to the results of Laveran's discovery of malaria's cause, and the later developments upon this basis, which will, sooner or later, remove from the world the necessity for quinine as a specific for that disease. In the malaria-infected swamps of Italy sanitation has reduced the mortality of the disease from 15,000 in 1890 to 7,000 in 1906.

Keeping pace with the campaign against malaria, and far outstripping this in its profound effect on the health, happiness, and, in some regions, the very existence of the human race, has been the fight against yellow fever. All are familiar with Reed's work in emancipating Cuba from the rule of this tyrant, and many know something of what Colonel Gorgas has done along the same line for the Panama Canal Zone, but it is probable that few are aware that, after a year of work on the Panama Canal, it was apparent that unless conditions of health there could be radically changed, our efforts were doomed to the same fate that overtook the French. It was Dr. Reed who showed the true source of yellow fever, and sanitation did the rest.

When Lord Lister demonstrated the cause of blood poison, at one blow striking the shackles from the surgeon's hands and freeing maternity from its greatest horror, what achievement of all the drugs of all the ages could be compared with

that single discovery? Its ever widening influence has been incalculable. Imagination fails utterly to grasp the significance of that word "Asepsis."

A great American surgeon, lately gone to his glorious reward, has said of these achievements: "The discovery of the microbic cause and real nature of inflammation was the first and greatest triumph of scientific medicine and has contributed more to the prolongation of human life and mitigation of suffering than all previous medical knowledge which has accumulated from the time medicine was first practiced and taught. It raised surgery from a mechanical art to a science, and placed the study and practice of medicine on a rational foundation and unlocked the doors which up to that time had barred the progress of intelligent and effective sanitation. The two distinguished figures which have inaugurated this new and enlightened era in medicine are Pasteur and Lister, the two men who, to my mind, have conferred a greater benefit on the human race than any other two mortals in the history of the world. These two scientists and investigators have built the foundation for the new temple of scientific medicine and surgery, in the raising of which enthusiastic scientists all over the world have taken an active part.

From earliest ages the Great White Plague had extended unstayed its merciless dominion. Its victims, drugged with a thousand vaunted "specifics"; subjected to numerous processes of torture under the guise of treatment, still continued to melt away by tens of thousands, leaving only a rapidly widening circle of contamination. In 1882 Koch discovered the tubercle bacillus; drugs practically disappeared from the scene. Again prophylaxis was the cry, and such has been the result that many municipalities can now point to records approximating that of New York,—a decrease of fifty per cent in mortality from tuberculosis in twenty years. Even including rural districts, the results of prophylaxis against this plague are astounding. In 1838 England and Wales lost from this disease 40 persons per 10,000 population; in

1906, despite great increase in density of population, the figures were 11.5 per 10,000. The *mortality* in 1906 was about equal to the *decrease* observed in the preceding thirty years; therefore, granted the same rate of decrease, in three or four decades the disease should disappear.

This progressive diminution can not be relied upon, but, following Koch's lead, albeit along various lines, scientists have planned and are carrying on campaigns against this arch enemy which give greatest promise of ultimate complete victory. It is worthy of note that none of these methods now undergoing trial depend for curative value upon drugs. Who could dwell for a moment upon the achievements of modern medicine and not think at once of Behring's boon to infancy and early youth,—the antitoxin treatment of diphtheria? So evident are its effects that few remain who refuse it the exalted place due a remedy which has transformed an erstwhile scourge into a comparatively innocuous ailment.

In like manner results are becoming more and more definite in the control of tetanus, bubonic plague, cholera and hydrophobia,—some of which are destined to early extinction, while others may only be robbed of their terrors.

The field of curative medicine of to-day is so closely associated with that of sanitation that their borders frequently overlap and we pass insensibly from one to the other. For instance, typhoid fever—although a reproach to any civilized community in that it exists at all—is a striking illustration of the efficacy of latter day methods—the combination of the forces of treatment with those of prevention. While the single measure of the external application of cold is credited with a reduction of almost 20 per cent in the mortality of this disease, a knowledge of its cause and method of dissemination renders its entire eradication not only possible, but imperative, and anything short of this well-nigh criminal. It *has* been done in Germany. That typhoid fever remains so prevalent in the United States is one baneful result of the

operation of that principle so deeply impressed upon the average American citizen, namely, his inalienable right to do as he pleases.

Besides the results obtained in the control of typhoid fever, note the situation with regard to the management of another and most common, widely spread, and terribly fatal disease—pneumonia. So far, in spite of scores of so-called specifics which have been advanced from time to time only to be found wanting and to be discarded in favor of the next equally futile method or drug, we have no agent by which the mortality from this disease has been reduced. Year after year we have listened for hours together to learned discussions of this most fruitful subject of debate; have heard one series of cases after another cited to prove the efficacy of this or that or the other remedy—from Antiphlogistine up—and have gone home pondering these things in conjunction with the fact that the mortality of pneumonia is to-day the same that it was one hundred years ago. Indeed, one eminent writer, author of a standard text-book on the practice of medicine, says in that work: "It does seem to me that pneumonia is a more fatal disease now than when I began practice thirty years ago." For pneumonia drugs have done their worst. Let us hope (and there is ground for it), that the new therapy will eventually find a solution of *this* problem, despite the failure, for practical use, of the first venture in that direction.

The peculiar operation of the present-day therapeutics is well illustrated in the handling of scarlet fever. Ignorant of its specific virus and therefore, for the present, unable to apply a curative serum or prophylactic vaccine, we turn to the other weapon of latter-day practice and by isolation and disinfection we execute a flank movement which proves more effective than would immediate frontal attack, confining to narrow limits another deadly disease, while we await confidently expected reinforcements from the laboratories.

Of greatest concern to the rapidly rising Orient, and apparently of more than academic interest to our western shores, cholera from time to time raises above the horizon its horrible specter face. More than once it has appeared in our midst, sending a thrill of horror to our very souls. By a gigantic crusade against filth, and by faithful persistence in education of the people, this disease will soon disappear from the earth. Along with it goes bubonic plague, even at the sacrifice of the cat's time-honored food.

Although a curative remedy for hydrophobia awaits development by some investigator of the future, this disease also has been stripped of much of its terror by application of the prophylactic measures first suggested by Pasteur.

The most brilliant research of recent years, resulting as it has in the nearest approach to the ideal method so far advanced, is that of Wright, which has given us the opsonic theory, fulfilling, theoretically at least, the conditions of the long-sought panacea. It bears a peculiar resemblance to the ideal dreamed of by our fathers—a specific remedy for each disease—but is distinctly modern in that drugs have no part in its application. May we not hope that along this line lies the *ultima thule* of medical practice?

The call from profession and society at large for something better than the old way, something by which results might be achieved, has brought into use a great array of so-called up-to-date methods of treatment, few of which will stand the test of time. The vast field of electro-therapeutics, productive of most wonderful opportunities for the charlatan in the profession as well as out of it (and so ardently cultivated by these and, we must admit, faithfully studied by some good men), gives but another proof of the effort to be rid of impotent drugs.

Hundreds of practicing physicians of to-day who were so fortunate during their student days as to have access to the enormous clinical material afforded by the Philadelphia General Hospital (more familiarly known as "Blockley"),

will recall one of the rare curiosities of that institution who, for perhaps a score of years, served his useful purpose as a source of knowledge, although himself an imbecile with never a ray of appreciation of his great service to his fellowmen or of the humiliation incident to exhibition before ungrateful students. They called him "Bart"—nothing more. If other name had been bestowed upon him by a loving mother, full of tender hope for her new-born babe, the hospital records failed to show it, and finally it came about that no man knew whence he came. Poor Bart! Having grown apace and apparently about to blossom into robust childhood, a dreadful blight fell upon his fair young life and a mother's fond ambitions faded at its baneful touch. At 37 years of age, when he died—or rather when the processes of animal metabolism ceased to operate within him—he was physically a misshapen child of four, while mentally he had remained a blank. Horrible, pitiable spectacle! Yet the saddest thought was that had he come into the world only a few years later the new therapeutics would have provided a remedy which would have strengthened those flabby muscles, dissipated that jelly-like fat, torn away the veil from his mind. and might have given to the world

> "Hands that the rod of empire might have swayed,
> Or waked to ecstasy the living lyre."

Ah! Gray's immortal lines contain no eloquence to voice a thought so sad.

With the marvelous results of thyroid therapy has come another line of modern treatment—that of the internal secretions. Cretinism and myxœdema have found their antidotes and the suprarenal glands promise as much for that rare but hitherto hopeless malady known as Addison's disease. In this group development has only begun.

So we might point to scores of plans being worked out for the advancement of curative medicine, some of which may yet reveal even more startling discoveries than the present generation has witnessed.

Having found the true causes of many diseases and working from those to rational cure, medical science has come upon the problem of removal of the cause—in a word, sanitation.

Already we are so familiar with some of the various phases of this far-reaching agency that we hardly realize to what extent it has permeated the life of the civilized world. From the well-known work of our national government both at home and abroad, down through the State, municipal and county officials, we find an important function of almost every executive body is that of advancing the public health by prevention of disease. Note the care exercised with regard to every detail of the environment of children in public schools—the air they breathe; the water they drink (and the cup they drink it from); compulsory vaccination; isolation of infectious diseases and quarantine against the same; regulation of light; careful examination of the eyes of every pupil and adjustment of glasses where necessary, and so on indefinitely.

We see it again in the solicitude, voluntary or involuntary, of employers for the welfare of their employees—impressively evidenced by the expense incurred in keeping the best of conditions about the operative while at work and, whenever practicable, at his home as well. The great humanitarian movement has touched even the soulless, sordid American Federation of Labor, and we find *it* giving really valuable aid, as shown by the circulation of vast numbers of pamphlets regarding domestic methods of prophylaxis against tuberculosis, and in various other ways.

At last physicians have ceased to fight their battles unaided by those for whom they fight; and when we remember that this combined campaign has only just begun, and consider the results already achieved; armed with the weapons of modern therapy and sanitation, we may confidently meet whatever conflicts the future holds in store.

Sanitation is the last grand advance of scientific medicine and the noblest expression of medical altruism. Observing its marvelous development in the past, and its infiinite possibilities for the future, we realize how truly, says the world's foremost physician: "Could Hippocrates meet again a class of students at some modern Cos and discuss the changes which twenty-five centuries had wrought, he would dwell upon this latter development of the science and of the art as the crowning benefit which the profession has bestowed upon the race, and he would repeat again those noble words which have found in this triumph their practical realization: 'To serve the art of medicine as it should be served, one must love his fellow-man.'"

THE IMPORTANCE OF THE WORK OF THE GENERAL PRACTITIONER.

BY DR. L. B. M'BRAYER, ASHEVILLE, N. C.

Is there any room left for the general practitioner? One would not thing so when he thinks of the many different specialties. There is the dermatologist, the aurist, rhinologist, laryngologist, gynecologist, stomatologist, G. U. specialist, proctologist, abdominal surgeon, naval surgeon, general surgeon, tuberculosis specialists, specialists on diseases of the eye, ear, nose, throat and chest, obstetrician, pediatrist, pathologist, bacteriologist, neurologist, alienist, opthalmologist, psychiatrist, chiropodist, habit cure specialist, osteopath, who is now a legal practitioner in this State, etc., on down.

Then what is left for the general practitioner? Oh, yes! you say, scarletina, diphtheria, etc. But that is claimed by the pediatrist and said claim is disputed by the dermatologist and the laryngologist. Well, you say, fevers affecting those above the age of puberty, other than the eruptive fevers which belong to the dermatologist and child-bed fever, which is properly assigned to the obstetrician. Until recently you would have been correct, but of late our own Dr. Register has found this to be the only field unoccupied by the specialist, and he has coined a new specialty—that of fevers—and has established an enviable reputation in that line, even writing books on his new specialty. And from the great success he is achieving I have no doubt many will be induced to take up this specialty.

Is the office of the general practitioner then nothing more than the assorting room in a laundry, where the bundles are brought in, assorted and labeled and passed up to the proper department? Or is the general practitioner nothing more than a floor-walker in a large department store whose duty it is to see that all inquirers arrive at the proper place?

Not so; the general practitioner must be as able to make a diagnosis in appendicitis and other surgical diseases as the surgeon, and must know as well when an operation is demanded. He must know the symptoms of ruptured tubal pregnancy or carcinoma uteri as well as the gynecologist, and if he does not operate himself he must know when an operation is necessary and must always be able to advise his patient intelligently and truthfully when to have and when not to have an operation. He must be able to make as early a diagnosis of tuberculosis as the tuberculosis specialist, and should be fully as competent to treat it.

He should use the pathologist, bacteriologist, surgeon and these other specialists to help him in making a diagnosis and in helping *him* to treat *his* patients and not be used by them.

He should act as a safety valve to these specialists, or he should stand in relation to them as does the rudder to the ship.

Now 'tis very well known that all these specialists are more or less feudists. The only sane man is the one who stands four square to every wind that blows, who has no hobby, who weighs everything properly and gives to everything its proper weight, who is well balanced, who never chases a rainbow. We all know that in this world we most often find the things we are looking for. You remember the story of the queen who called two of her subjects and said to one, Go gather all the flowers in my kingdom, and to the other she commanded, Go gather all the thorns and thistles in my kingdom. The first returned and reported: May it please your majesty, the task is too great; there is nothing in your kingdom but flowers. The second likewise reported: The task is greater than a million men could accomplish, for I find thorns and thistles everywhere. You no doubt remember the story of a rich woman that went the round of all the specialists. The neurologist gave her electricity, hydro-therapy, etc.; the tuberculosis specialist gave her the rest cure and serum-therapy; the surgeon did a nephropexy, and the gynecologist did a

curettage, ventro-fixation and ovariotomy, and so on, until she had run the gamut, suffering many things at the hands of the doctors, and like the man in the Bible her last state was worse than her first; until finally she went to a general practitioner and he gave her a dose of Hg. Chlo. Mitis and cured her.

As a matter of fact I attended a medical meeting on one occasion and heard three men read papers, and each one of them declared most positively that 33 1-3 per cent of the human race were suffering with the malady that he was riding as a hobby at that time, and required the special treatment that he had been using; in one case an operation, which was plain to see the surgeon hoped would bear his name; and which I may remark in passing is hardly considered a legitimate operation and is never done by some of the greatest surgeons of to-day.

And so I say the general practitioner must act as a safety valve. It seems necessary to the existence of these specialists that they should ever and anon, under the inspiration of their work, get on an extra heavy head of steam, and the general practitioner acting as a safety valve will allow them to blow off and no harm come of it. Listen to these men, they are usually well posted in their line; learn of them; but it is not necessary for you to accept everything they say until you have proven it true. Have the bacteriologist help you in making your diagnosis, but if he fails to find the tubercle bacillus, when you have many of the symptoms of tuberculosis, don't wait on him but make your diagnosis and he will corroborate you later. On the other hand, if he finds the klebs-lœfler bacillus in a healthy throat, it is not necessary or wise for you to quarantine your patient.

If you call a surgeon in to see a patient with you and, after failing to find anything else in his line, he finds an imaginary appendicitis and describes with great eclat and holy horror the terrible abyss over which your patient is hanging, when you know she has never had appendicitis, have the manhood

to say so, and here's hoping you will have the confidence of your patient so securely that she will never spend an unpleasant moment on account of the consultant's enthusiasm over his hobby. Just act as a safety valve for him and no harm will come to any one.

The greatest need of the medical profession at this time is the ability to make an early diagnosis, and these specialists are all dependent on the general practitioner to make this diagnosis. Take, for example, perforation in typhoid: an operation in the first few hours gives a good chance to save life; postponed twenty-four hours on account of the general practitioner failing to make a diagnosis and the case is hopeless. Perforative appendicitis is almost equally as fatal if operation is postponed for a few hours; the general practitioner is responsible. Volvulus, intus-susception and obstruction of the bowels from other causes are only susceptible of a cure if diagnosis is made inside of a few hours. The general practitioner is the man who has the patient in charge. Probably the greatest good the tuberculosis specialist has done is in stressing the great importance of an early diagnosis, and necessarily his lamentation has been directed to the general practitioner, because this responsibility—and a great responsibility it is—falls upon his shoulders.

Cancer can be cured if only an early diagnosis is made and proper treatment is instituted; and again the general practitioner is the man who is first consulted and in whose hands the destiny of the patient lies.

In extra-uterine pregnancy it's the general practitioner who must of necessity be gynecologist and obstetrician, who must make the diagnosis while it is easy to save life.

In diphtheria the general practitioner can not always have the bacteriologist at his command to confirm his diagnosis, and if he has and waits to institute treatment until he gets a report, the child may be beyond the possibility of recovery.

I could go on at length but it is useless; you have the idea.

Does the general practitioner then measure up to his re-

quirements? In the main, yes. Is he as capable of making an early diagnosis in typhoid or appendicæal perforation as the surgeon? There is certainly no reason why he should not be. Is he as capable of making a diagnosis of extra-uterine pregnancy as the obstetrician or gynecologist? If not, why not?

Then it is apparent that the general practitioner must be as well posted on the symptoms and treatment too, if you please, of all diseases as the specialist is in his line. He may not be able to properly conduct the treatment for all diseases, but this is no reflection on him. Do you know any one who is? Isn't the field of surgery large enough for one man? Isn't the eye, and especially if you couple with it the ear, nose and throat, enough for one man? Do you think that every general practitioner should equip himself to cover the field of all the different specialties? Certainly not; this would be impossible if only the armamentarium were considered; but unless he does equip himself mentally as well as any and all the different specialists he does not measure up to the requirements of his profession.

"All work and no play makes Jack a dull boy" is true today, and is true as regards the medical profession. The specialists have a way that amounts to a fad of taking a week or two off once a year or once in two years and going to the medical centers to watch the work of their confreres in their line. The ablest men we have do this. It is nothing uncommon to run across Ochsner or the Mayos in New York attending the clinics of Gibney, Coley, Bull, Wyeth and the others. Likewise at the Mayos' clinic you will meet men from New York, Philadelphia, Boston, Frisco, Fayetteville, High Point, Asheville, Berlin and all points North, South, East and West.

The general practitioner works longer hours, more days and more nights than the specialist, and if anybody deserves a vacation once in a while it is the general practitioner. You owe it to yourself, you owe it to your patients, and your patients owe it to you. So tear yourself away and visit your

confreres in the medical centers in your own and other States, and across the pond if you like. It will make you a better doctor and therefore you will be worth more to your patients and your community. Your patients will feel a pride in the fact that their family physician has gone to the city to see if there is anything new going on in medicine, and if perchance you should feel that you are really worth more to your patents and should let it appear in the bills, there will usually be no kick coming. Of course your patients will get sick in your absence and will have to call another doctor, but what difference does it make? If you are worthy of them and they are worthy of you they will return to you; and if not, others will come in their stead.

Again, if you make a diagnosis of tubal pregnancy and submit your patient to the gynecologist of your choice for operation, go along, watch him operate, see if your diagnosis is correct; or, if you have had the specialist in consultation, see if he can square his diagnosis with the facts. It will do you good. You will be worth more in your professional life for having done so. You know we don't study pathology in the dissecting room or at the autopsy table any more; but, as John B. Deaver aptly puts it, in this day of advancement we study living pathology.

May I ask again is there any room for the general practitioner? Most emphatically yes. The general practitioner is the basic work, the ground work of our profession. The specialist may perchance rise to heights of fame that the general practitioner may never see. He may become renowned and hear the shouts of glad acclaim from the applauding multitude that may never reach the ear of the general practitioner, but to reach these heights, to gain this renown he must use the general practitioner as a stepping-stone. And when we shall all stand before the Great Physician, who will reward with candor and judge with impartiality, methinks I can hear the Judge say to the general practitioner, come up higher, "for he that is least among you all, the same shall be the greatest."

I can not close without saying a word in commendation of the profession that composes the Medical Society of the State of North Carolina. Time was, within the memory of most of us, when if an operation of any kind was needed the patient must needs journey to the city of Baltimore or Philadelphia or New York, but not so any more. In almost every city in our grand old State we have well-equipped hospitals at which any and all kinds of operations can be and are done by our own native doctors, with equal ability and ofttimes with better results than is obtained in the larger hospitals in our larger cities. To-day the medical profession of our grand Old North State is wide awake and up and doing. A new operation of great importance is done by some of our great men in some of our great hospitals to-day; you need not be surprised if it is done in North Carolina by a North Carolina surgeon to-morrow.

A new treatment for tuberculosis is promulgated from the continent by cable, possibly to the *New York World*. Our learned specialists in Greensboro and Asheville will be using it next week. The investigation of pellagra, a preliminary report of which is presented under my section by Drs. Wood, Lavinder, McCampbell and others, is worthy a place beside the work done in the Carnegie Institute for Original Research in New York, and will have a valuable place in the medical literature for all time.

Only last year, when our State School Book Commission was preparing to adopt books for our public schools for a period of five years, a request was made that the company furnishing the books on physiology and hygiene be required to have a chapter on tuberculosis and its prophylaxis. The request was granted, the chapter was submitted to the Secretary of our State Board of Health and other leaders in the profession in this State for their approval, and is now being studied in every public school in our grand old State, and to my personal knowledge this chapter is attracting attention in many States.

And may I be pardoned if I say that this Society has had much to do with bringing about this spirit of progressive medicine throughout the length and breadth of our beloved State. All honor to the men of our profession who have helped to bring about this happy state of affairs. Some of them have gone to their final reward; all honor to their memory and peace to their ashes. And let those of us who are here realize the great responsibility resting upon us and march forward shoulder to shoulder, hand in hand, conquering and to conquer.

PELLAGRA—ETIOLOGY AND PATHOLOGY.

BY C. H. LAVINDER, M.D.,
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In appearing before you to read a paper on the etiology and pathology of so ancient a subject as pellagra with nothing whatever to offer that is new, I feel that some explanation is necessary.

It is true that pellagra is an old subject, and it is equally true that the literature of the subject is extensive, the list of titles in the Index Catalogue of the Surgeon's General Library covering some eight or nine pages; but for all of this I venture to say that to most American physicians pellagra is little more than a name. And why should it be otherwise? Until lately it was a disease which did not concern us except in an academic way. More or less recently, however, a disease, which is possibly true pellagra, has appeared in the Southern United States and the question may possibly soon become a very practical and important one, at least for the Southern physician, if indeed it has not already done so. In addition to this most of the literature on pellagra is not readily available to many physicians.

To those who arranged the program of this meeting such considerations have seemed sufficient for the insertion of one or more papers on pellagra, and I think their wisdom will be approved. For if we are to have pellagra among us it behooves us all at once to learn something of a disease which since early in the eighteenth century has been, and still is, a veritable plague to some parts of the Old World.

ETIOLOGY.

In discussing the etiology of any disease whose cause is not definitely known one must expect to meet many and varied theories, and pellagra is no exception. Procopiu,[1] in his monograph, lists no less than twenty-one theories of its causation, many of which possess, it is true, only historic value.

The disease we call pellagra was first described by Casal, a Spanish physician of Oviedo, in 1735. He had observed it among the Spanish peasantry, and finding nothing in the literature to aid him, called it *mal de la rosa,* or the rose disease (from its characteristic erythema). He regarded it as a kind of leprosy.

Following Casal, during the next few years, a good deal of Spanish literature appeared, and the disease was described under a variety of names.

In Italy pellagra was first noted in 1771. The disease rapidly spread and a large Italian literature followed, and again the disease was described under a number of different names. By 1784 the disease had become of such importance that, under royal authority, a hospital was founded for a study of its nature, and the elder Strambio, whose name is associated so prominently with pellagra, was placed in charge.

The views regarding the nature of the disease were various. Some called it a kind of leprosy, others syphilis, scurvy, malaria, etc.

About 1810 Giambatista Marzari published a notable and remarkable paper on the subject, putting forward the view that pellagra was due to the consumption of Indian corn. His explanation of the relation between corn and pellagra does not seem to have been very clear, but his paper marked a new era in the study of the disease.

Following this paper, for the next few years, students of pellagra seem to have been divided into two great schools—the so-called maize and anti-maize schools, or those favoring the theory that maize caused pellagra and those who opposed this view.

In 1844, before the Congress of Milan, Ballardini, an ardent advocate of the maize school, presented another noteworthy paper on the subject, extending and developing the maize theory by creating his so-called "verdet" theory. This theory was that maize is pernicious only when, under the influence of a parasitic growth, it has undergone certain altera-

tions. He had observed on maize a fungus, sporisorium maidis, and from its resemblance to copper acetate (vert-de-gris) with its green color, he called it "verdet."

The "verdet" theory found many supporters, and among the most ardent of them Lombroso, who later developed the theory very much.

In France pellagra was first observed in 1812 by Hameau (senior), a physician of Teste de Buch (whence the French name for the disease, *maladie de la Teste*). Much French literature followed, and finally, in 1845, Theophile Roussel wrote his interesting work on pellagra, following this later with other important publications. In these works he definitely established the identity of *mal de la rosa* with pellagra and sustained with great talent the "verdet" theory. His works remain classics.

In France as in Italy the maize and anti-maize schools waged incessant war over their rival claims.

There is much valuable German literature, although the disease does not occur in Germany.

From Roumania, where pellagra is endemic, have come also many valuable contributions.

Laying aside many theories of only historic value, one might mention as of interest the view that pellagra is a variety of leprosy. This view will not bear scrutiny, but if one should observe a case of pellagra with a well-developed erythema, such as has been seen in Wilmington, the error could at least be regarded with sympathy. Pellagra has also been considered a manifestation of other diseases, as malaria, syphilis, scurvy, and even tubercle; these ideas, likewise, will not bear close examination, and some of them at least have arisen from the fact that other diseases, like malaria, are often associated with pellagra.

Then there is the view, still held by some of the French school, that pellagra is not a definite morbid entity, but only a symptom-complex found in cachexias of diverse origin, and

that pellagrous erythema is only a common, solar erythema occurring in individuals predisposed by bad general physical condition (Ceeconi).[2] This view is held by most authorities to be erroneous and to be explained by the fact that such observers have confounded true pellagra with a certain symptom-complex, analogous to true pellagra, which may sometimes arise in cachectic persons. Such cases are said, however, to differ from true pellagra, and the differentiation is also said to be easily made by an experienced observer. For the want of a better term such cases are called pseudo-pellagra or false pellagra, that is to say, not pellagra at all. This distinction is very forcefully made by students of the disease, but to many the distinction does not always seem so clear. Mistaking effect for cause, insanity has been given as a cause. Alcoholism and poor food with bad hygienic surroundings have also been urged as etiological factors, but when one considers that these factors are ubiquitous, whereas pellagra is geographically limited to a rather small area, they can at least be regarded with much doubt.

By reason of the seasonal periodicity of pellagra the sun and heat have been advanced as causes, but the same objections may be urged against them. Exclusive vegetable diet, the use of various cereals and other foods have also been given as causes.

Quite naturally, also, the disease has been regarded by some as an infectious disease. Several workers claim to have isolated micro-organisms from the blood and organs of pellagrins, but so far none of these observations have been confirmed, and all rest under much doubt. It is of course possible that the disease may prove of an infectious nature, but there are good reasons against such a view; for if pellagra be due to eating altered maize (as seems most probable) then the high temperature to which maize is submitted in its preparation as food would seem to render it sterile.

This brings us to a brief consideration of the maize theory. This theory, first put forward by Marzari, later developed and extended by Ballardini, has found perhaps its most ar-

dent supporter in Lombroso, and is the theory which in one form is now accepted by the great majority of students of the disease.

Marzari, while he seemed certain of the causal relation existent between maize and pellagra, did not have apparently very clear perceptions as to this relation. His idea seems to have been a sort of metabolic (if you will allow this forced sense of the word) one, that it is to say, he seems to have thought maize lacking in certain essential food qualities, and when used as food, extensively or exclusively, it produced disease by reason of lacking these qualities.

Ballardini, in his "verdet theory," believed that, due to a certain parasitic growth (sporisorium maidis) on maize, there was developed a toxic substance in the grain which, on being used as food, caused the intoxication, pellagra.

Lombroso, however, found many fungi on maize, aspergilius glaucus, penicilium glaucum, and others, and affirmed that sporisorium maidis is rare. No species seems to be constant enough to be rated as the only cause.

The exact relation between pellagra and altered or spoiled maize seems to have furnished a variety of opinions. Marzari, as was stated, had a sort of metabolic view. Others, with a little difference, adopted this view, affirming that the change produced in the maize by parasites does not necessarily create a toxic substance, but simply alters the food value of the maize. To all of these so-called metabolic theories it would seem that a full and convincing reply can be found in the elaborate chemical analysis and biologic experiments to which maize has been submitted to determine its food value. Without quoting the data, it seems to have been clearly shown that maize is a good and easily assimilable food; and further, that while it may lose something by alteration under the influence of fungous growths, such loss is insufficient to account for pellagra.

There are others who have viewed pellagra as an autointoxication, explaining that a constant or exclusive maize diet makes certain changes in the vegetating properties of the

intestinal flora, whereby a toxic substance is produced in the intestinal tract and absorbed therefrom. Di Donna has stated that the colon bacillus, under such conditions, will take on an increased and specific virulence. There are still others who regard the disease as an intestinal mycosis, the offending organisms being eaten with the maize, localizing in the intestinal tract and producing an intoxication. All of these views lack confirmation and have much against their acceptance.

The view which has found almost general acceptance among students of the disease is that by reason of certain changes wrought in maize by the growth thereon of certain undetermined parasites (fungi), a poisonous substance (or substances) of a chemical nature is produced, and that this substance (or substances) causes in persons who use such maize as food an intoxication disease, pellagra.

Procopiu[3] says: "Maize altered by certain fungi, employed as food, acts by one or more poisons (probably ptomaines), produced by these parasites, in causing pellagra."

Tuczek[4] says: "Pellagra is an intoxication disease. This teaching * * * can not be seriously questioned."

Babes and Sion[5] say: "All authors, who have of late years taken an especial interest in pellagra, excepting where pellagra is confounded with pseudo-pellagra, always confirm anew the dependence of pellagra on the use of spoiled maize as food."

As to the nature of this change in maize and of the toxic substances formed, not a great deal is definitely known. By some the poisonous substance or substances are regarded as ptomaines. Lombroso, working with the chemist, Erba, isolated from spoiled maize certain toxic substances, a watery extract, an alcoholic extract (which he called pellagrozein) and an oil, also in very small quantity an alkaloidal substance, which produced spastic conditions.

He thought that in altered maize there might be two different poisonous properties which, in their combined action, could produce the symptom-complex of pellagra—one contained in the alcoholic extract and the oil, having an action

something like the alkaloid strychnine; and the other in the watery extract, a narcotic substance like that found in hemlock, and in its action allied to nicotine. The exact chemical nature of these substances remains undetermined.

Some other workers report a tetanizing alkaloid in altered maize.

The last word has apparently not yet been spoken by the chemists.

Experimentally Lombroso fed human beings and several varieties of animals on the poisonous substances he had isolated, and caused a disease picture which in some respects was analogous to pellagra.

Procopiu[1] also has given tinctures of spoiled maize to human beings with similar results. Babes likewise has made similar experiments with similar results.

Besides this Babes, with others, has made investigations with regard to an antitoxin in the blood of pellagrins. Working with Mlle. Manicatide, he has injected subcutaneously aqueous and alcoholic extracts of altered maize in dogs and mice with resulting death after presenting symptoms in some respects analogous to pellagra. Also he has injected such extracts and simultaneously blood serum obtained from cured pellagrins, with the result that the animals survived much longer. With regard to this antitoxine Babes and Sion[5] say: "It can not so far be impugned that in the blood of a pellagrin there exists a substance which possesses the property of antagonizing the toxic action of extracts made from altered maize." Triller,[6] Gosio[7] and others have expressed similar views.

In support of the relation between maize and pellagra many other important facts have been noted.

Pellagra appeared in the Old World only after the introduction of maize culture from America, and no mention of such a disease is said to be found in the older authors.

Where pellagra occurs it is always worse among the rural population, and it is the rural population which subsist largely on maize, and most often altered maize. They prepare it in

many ways, but most often in the form of a paste or hasty pudding made by boiling corn meal in salt water—called in France *gaude,* in Italy *polenta,* in Roumania *mamaliga.*

In countries where maize is grown and pellagra is not seen or is rare, maize is not used so extensively or exclusively as food (Austria, Greece, Asia Minor, Egypt, etc.); or else the hygienic conditions are better and the climate is far more adapted to raising a good quality of maize, maturing and properly storing it (United States). It seems to be admitted by all that improperly matured and stored maize is most likely to undergo alteration.

Antonin[1] observed in Galicia (a province of Austria) pellagrins among robust males, but never among women and children. Maize is unknown in this province. Upon investigation he learned that the men passed some months of the year in Roumania and as laborers were compelled to feed on gaude.

Many observers report pellagrins cured, or their condition ameliorated, by withdrawing maize and substituting good food, especialy if done more or less early in the disease.

Zantedeschi[1] reported to Ballardini that pellagra disappeared from Borejno in 1816-17, when, by reason of high price of maize, the poor had to subsist on potatoes and other vegetables.

Zambelli[1] states that young pellagrins who become soldiers soon become sound and healthy.

These and similar facts speak eloquently of some casual relation between maize and pellagra, but the definite relation existing still remains in some doubt.

It is worthy of mention that Procopiu[1] and others believe that alcohol (whiskey) distilled from spoiled maize may contain the pellagrogenous poison.

Among the causes which may be classed as predisposing may be mentioned the following:

Individual Predisposition.—Is often evident, as one would naturally expect. Boudin,[6] in 140 cases, gives one case only in a family, 67 per cent, more than one, 33 per cent.

Heredity.—The disease does not seem to be hereditary, but it is stated that the children of generations of pellagrins are of feeble resistance and lowered physical vitality.

Sex.—There seems to be but little difference.

Age.—The statements are discordant on this point. Procopiu[1] says the disease is more frequent from early age up to 20 years. Triller[6] quotes Potarca as saying that the disease is two or three times more frequent between 20 and 40 years. The disease does not seem to occur among infants unless they are fed on maize.

Seasons, Heat and Sun.—These factors seem to have only an indirect effect. It seems to be generally admitted that the chemical rays of the sun may act as an exciting cause for the erythema in those who already have the disease. Further, heat and the seasons have a decided indirect effect in the development of fungi on the maize.

Other Diseases.—Act only by lowering resistance. Pregnancy and lactation are stated to predispose.

Alcoholism.—Said to act only by lowering resistance unless made of alcohol distilled from altered maize.

Contagion.—The disease does not seem to be contagious in any way. Pellagrins may associate intimately with the well and there is no effect unless altered maize is used as food. Procopiu[1] states that Boniva attempted to inoculate the disease with blood and saliva, but obtained no result.

PATHOLOGIC ANATOMY.

The morbid anatomy of the disease is to some extent inconstant, and can hardly be considered characteristic. Tuczek[4] points out the fact that from the variety of the disease picture one could hardly expect to find a single, definite condition, and further, that in many reports there are included heterogeneous and manifold accidental lesions which would naturally occur in a very chronic disease where the lesions of senile involution and of intercurrent maladies may also be looked for.

As part appearances of cachexia he includes atrophy of the

subcutaneous fat and musculature, brittleness of the bones, atrophy and tendency to fatty degeneration of the internal organs, especially those innervated by the vagus: kidneys, spleen, liver, intestines and lungs.

He further notes three groups of morbid changes:

(1) Of the intestinal tract. Thinning of the walls in consequence of atrophy of the muscularis, not seldom hyperæmia and ulcer formation in the lower part of the intestine.

(2) Abnormal pigmentation, especially of the ganglion cells, heart musculature (brown atrophy) liver cells and spleen.

(3) Alterations in the nervous system, which are very important. He states that the variously described conditions of hyperæmia, anæmia and œdema, as well as some inflammatory conditions of the central nervous system and its coverings, can not be attributed to pellagra. The same conditions occur in many other morbid conditions. He further states that the findings in the brain are practically negative.

In the spinal cord he has described various degenerative lesions, most often and most extensive in the posterior columns, and in the lateral columns, also occasionally in other locations.

He further states that typhoid pellagra has no special pathology.

Lombroso summed up the morbid findings in pellagra as follows: atrophy, fatty degeneration, hyperæmia, pigmentation.

Marinesco described degenerative and pigmentary changes in cerebral cells, as well as in pyramidal neuroglia cells. Babes and Sion have described similar lesions.

Babes and Sion have also noted the resemblance between the morbid lesions of pellagra and those of tabes dorsalis, but this resemblance is said only to begin when the process is much advanced.

Proliferation and obliteration of the central canal of the cord has been noted by several observers.

Tuczek thinks degenerative changes in the peripheral nerves should be viewed with caution when one considers the great frequency of such conditions in chronic illness.

Babes regards the skin lesions of tropho-neurotic origin.

PATHOGENESIS.

In the pathogenesis Procopiu gives some very suggestive ideas. He points out that pellagra is an intoxication disease of great chronicity; that the greatest force of the poison is expended on the nervous system; that our lack of knowledge as to the chemical nature of the poison or poisons leaves us in great doubt as to the mode of action, length of stay in the body and method of elimination.

He suggests that perhaps elimination takes place from skin and mucous membranes, giving rise to the exanthem (erythema), and the enanthem (stomatitis and intestinal hyperæmia), though it is not to be forgotten that these symptoms may depend on changes in the nervous system (trophic). He also suggests that the great chronicity of the disease and the slow progress to recovery, when this takes place, gives rise to the thought that the poison or poisons may be very slowly absorbed and equally as slowly eliminated.

It is worth noting, too, that Triller devotes a short chapter to the chronic and recurrent nature of the malady, discussing the question as to whether we must regard the disease as a chronic disease with periodical recurrent manifestations (exacerbations), regardless of a continuously acting cause, or whether it is simply a question of recurrent repoisoning. The nature of the disease and the weight of authority seem, however, to be on the side of the view that it is a very chronic disease with recurrent manifestations.

CONCLUSION.

Finally, to refer briefly to the cases we have seen in and around Wilmington, we have, so far as conditions would permit, studied the few cases coming under our observation both clinically and pathologically. Our material for such study has not been very abundant, however.

Working with Dr. E. J. Wood, of Wilmington, I have made blood cultures from three cases, and from one of these on two occasions. From two of the cultures I have isolated a bacillus, which from tinctorial reactions and morphological appearances seem identical, but they differ somewhat in cultural peculiarities. It is possibly a contamination, but will require further investigation. In one necropsy we have also made cultures from liver, spleen, kidney and spinal fluid, but with no definite results as yet. We also have under investigation some pathologic material, but at present our work is too incomplete for a report. I may add that in making cultures our hope was not so much to find a causal organism, but simply to make as complete a study as possible in order to prove or disprove whether the disease we have encountered is, as most of us believe, true pellagra, and not one of the conditions described as pseudo-pellagra.

In conclusion, I acknowledge my indebtedness, already very evident, to the general literature of pellagra. As I stated, I have nothing new to offer, and my paper is but little more than a resume of such literature as I have had the time to consult.

I also wish to express my indebtedness to certain local practitioners of Wilmington; to Dr. T. M. Green for the privilege of seeing a case; to Dr. R. H. Bellamy, to whom belongs the credit for having first suggested the nature of the disease in Wilmington, for several favors; and especially to Dr. E. J. Wood, with whom I have had the privilege of doing a good deal of work.

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THE PROBLEM OF THE GENERAL PRACTITIONER TO GYNECOLOGY.

BY J. ERNEST STOKES, M.D., SALISBURY, N. C.

The General Practitioner amid the affairs of mankind stands out unique. As the years glide by and the centuries come and go, all down the history of the human race, we find none whose deeds of love and acts of courage are greater than those of this silent man—whom we call the General Practitioner. With no orator or poet to sound forth his praises; with no historian to record his efforts; often sorely tried and misjudged; often weary and worn in heart as well as in body; with weapons inadequate for the struggle, only upheld by his sense of duty and loyalty, he fights on, day after day and night after night, silently but earnestly, his grim battles with disease and death. Sooner or later, he, too, falls in the fight —to the world a life that is to be replaced by another; but to the Judge of all, a life that by its toil and devotion has added something of brightness, or perhaps even something of glory to the dark history of the human race.

In regard to all matters that pertain to property, possessions, and money, men study and familiarize themselves therewith, but as to the question of health and disease—although involving life and death—men give but little study, leaving these matters to the family physician, the General Practitioner. And what a gigantic task it is that thus falls upon this man whom we call the General Practitioner!

The human organism is the most wondrous structure on earth. A living combination of things that would seem impossible of combination. Component parts that are essentially contradictory, the physical and the psychical, the material and the immaterial, the mortal and the immortal, each in itself as marvelous as the other! The physical so intricate, so complex, so manifold, as to have baffled human study

for over six thousand years. The psychical so mysterious that only the voice of Faith can tell us whence it cometh or whither it goeth! And yet they are so united, and, as it were, so interwoven that whatever affects the one necessarily affects the other. To keep in tune and to restore, when lost, the harmonious workings of this wondrous instrument is the great task that falls upon the General Practitioner.

In deed too much credit can not be given, nor too much praise spoken of the General Practitioner—the fondly trusted family doctor, the private in our great army. "With him, humanly speaking, are the issues of life and death, since upon him falls the grievous responsibility in those terrible emergencies, which bring darkness and despair to so many households."

Gynecology on the other hand is so closely allied to those conditions associated with the very beginning of life, with all its hopes, joys and happiness, that the General Practitioner's relation to this specialty is one of more than passing interest.

Gynecologic lesions are, generally speaking, assigned to one of two groups, Major and Minor. To the first group belong those cases of gravity, which not only involve the health, but may imperil the life of the patient. Conditions which demand active and prompt treatment, and now in this period of science and progress of medicine, it is not to be questioned, surgical treatment in the hands of those specially prepared by experience and training; while thoroughly equipped in surroundings and appointments with every detail. It is the second group however—the Minor Gynecologic diseases with which the General Practitioner is most closely associated, and should be most deeply interested in. In this group, though the life of the patient is not in danger, nor the health of the patient even directly impaired, the restoration to health often depends solely on the judicious action of the General Practitioner.

The relationship of the General Practitioner to Gynecology may be well likened to the connection between the Science and the Art of medicine. Where Science indicates the recognition and study of the abnormal condition existing; while the Art aims to remove the abnormal condition and to restore and to maintain the normal state of health.

How far the General Practitioner shall enter the active field of operative gynecology, or assume the responsibilities of pelvic surgery with its unforseen intricacies and possible exigencies, the writer makes no endeavor to decide. It is a decision which each man is to make for himself, with a conscience for a guide and God as his Judge. In view, however, of the large and broad general medical information, with its extensive scientific issues, which are incumbent upon the General Practitioner to acquire for general practice, it would be well, before entering the operative field, to remember one of those ancient aphorisms, which is said to be still the most certain and uncontrolled of any science has produced, and which portrays a perfect understanding of both nature and art—namely, "Art is long, life is short, experience deceptive, opportunity sudden, decision difficult."

The question then here arises how much gynecology should the General Practitioner know? As much as possible naturally; but certainly he should realize the great importance of separating the real minor gynecologic lesions from the supposed or imaginary ills and ailments referred too often to the generative tract, and which so deeply affect certainly the mind of the patient, even when not the body. For it is in just this condition, that the General Practitioner can be more potent than the specialist, as he knows more about the patient, sees her earlier and more often. Yet it is just here that the greatest errors of judgment may be made.

For the most part the General Practitioner makes a correct diagnosis of the presence of an existing lesion, but a great error, far-reaching in effect, may be made by actually

connecting the array of general complaints of the patient to that lesion. The patient is so advised of the lesion, and by willing consent only too often local treatment is instituted. Though this treatment may be successful and the local lesion removed, the general symptoms and failing health nevertheless go on. So that the General Practitioner by injudiciously associating a lesion, purely local in its effect, with the patient's general remote symptoms may doom her to disappointment. She at once begins to magnify trifles, and erroneous theories become fixed in her mind. The way is laid for more extensive, almost interminable local treatments, and the initial step taken for the final psycho-neurotic trend, with the genito-urinary tract for a basis. On the other hand, the family doctor can remove simply through sound judicious advice many of the distressing discomforts of a supposed minor gynecologic ailment; or by changing an unhealthy mode of living, on the part of his patient, relieve her of some of the actually real ones. The patient will thus be spared unnecessary meddling on the part of the General Practitioner, and in many instances be kept away from the officious manipulations of a specialist. For not infrequently, patients with very unimportant minor ailments, some real, and others even supposed, unnecessarily seek out the aid of a specialist, because the General Practitioner has unfortunately associated in their mind, a relationship of cause to effect, between the local and general conditions. Yet he has failed to bring about the tried-for relief. Naturally these patients becoming uneasy and unsettled in mind, as well as in body, seek the aid of specialist after specialist, expecting relief, and profoundly impressed by the probable gravity of the ailment, when he, too, fails. This is not without its significance, for in many instances the specialist does fail in satisfactorily disassociating in the mind of the patient the local condition from the general ill health. This difficulty is especially noticeable in those cases of a local minor disturbance, accompanied by an

array of such symptoms as persistent headache; backache and spineache; as well as in the intractable, aggravated forms of dysmenorrhœa and leuchorrhœa, associated with hebitude and obstinate constipation, loss of flesh and general mental depression with nervousness and wakefulness. In fact the "minor diseases of women are usually associated with many symptoms which in no way depend upon the local disease, their relation being only that of dependence upon a common cause." These patients are very much more in need of the aid of the General Practitioner, as adviser and friend, counselor, and companion, toward removing or warding off some ulterior cause for the condition, than local treatment or the services of a specialist.

In properly selected cases, the General Practitioner should certanly give local treatments, correct displaced wombs, and treat certain acute inflammatory conditions. He should be ready and prepared to do such minor operations as dilatations, curettage, or repair a freshly ruptured perineum; but in his relation to Gynecology the General Practitioner's sphere of greatest activity and usefulness, unquestionably, should be along hygienic and prophylactic lines. This is a "field preeminently his." This is precisely along the line of progress in modern medicine. Prophylaxis, for the elimination of diseases, is now demanded and enforced by civic authority, while the theories and laws for an healthy mode of living are being more and more disseminated by scientific lectures and popular addresses, in order to prolong life, do away with the ravages of disease and make stronger the race of man. And yet what greater blessing could befall the human race than the rearing of perfectly developed young women freed from the steadily increasing tendency to functional neuroses.

The natural life of woman may be divided into three phases. First, from birth to puberty; second, the period of menstruation and possible child-bearing; third, the menopause.

The first period does not come immediately in line with this paper. However, the proper care, and actual handling of the young growing girl, as she approaches puberty, have so direct a bearing and intrinsic effect upon the second period, that I quote without discussion—a pungent excerpt from the "Psychology of Adolescence." "Rousseau would leave the prepubescent years to nature, and to these primal heredity impulsions and allow the fundamental traits of savagery their fling until twelve. Biological Psychology finds many and cogent reasons to confirm this view if only a proper environment could be provided." * * * "But now another remove from nature seems to be made necessary by the manifold knowledges and skills of our highly complex civilization. We should transplant the human sapling, I concede reluctantly, as early as eight, but not before, to the school house with its imperfect lighting, ventilation, temperature. We must shut out nature and open books. The child must sit on unhygienic benches and work the tiny muscles that wag the tongue and pen, and let all the others, which constitute nearly half its weight, decay. Even if it be prematurely, he must be subjected to special disciplines and be apprenticed to the high qualities of adult-hood, for he is not only a product of nature, but a candidate for high developed humanity."

It is the second period,—the menstrual function and child-bearing period—which offers a broad open field for the General Practitioner. Properly cultivated, it is capable of yielding a rich harvest of the golden grain of strong, robust girls, wives and mothers. This is the period of great opportunity, of inestimable importance for medical gynecology, and should hold the attention of the General Practitioner. He should advise and instruct the young mother regarding the hygiene and proper care of the girlhood of the maturing daughter. The mother should know and fully realize that the daughter's lack of physical development, back-

ache, and irregularities of menstruation, as scanty, painful, suppressed, with a host of other functional disorders, time and again arise solely from a disregard of the fundamental principles of hygiene; too close application to study and from lack of sufficient physical culture and out-door exercise. How often may one see a poorly developed nervous girl, with all the irregularities of the menstrual function, sitting hours and hours, day after day, preparing for her musical recital; or striving for the highest honors at the expense of the development of her reproductive organs! How much better for civilization were these girls being so developed in body as to have the wholesome inclinations of womanhood and motherhood even though they be, as Portia describes herself "an unlettered girl, unschooled, unpracticed."

Nathan Allen urged that while in men everything depended upon bodily vigor, this was even more important for girls, for in them we were educating the race. The best balance for weak nerves or other organs was well developed muscles, and in this at proper periods he saw the way of safety for the well and for salvation for the sickly. Stated and out of door and not excessive physical culture he thought had formative influence upon the monthly function, and he, too, held to periodic remission of work for mind, heart and muscles.

The young girl should be taught by delicate, hygienic instruction, that the menstrual function is a sequence of development and maturity, and not a "disagreeable function nor a badge of inferiority." All her attempts at concealment by determined efforts to carry out her usual daily life, or to meet her social obligations, irrespective of her condition should be discouraged. Rather should she be taught the dangerous ill effects of fatigue and excitement, and "the need of rest, proper regimen and toilet."

As the General Practitioner should be adviser to mother and daughter, so should he be counselor to husband and

wife. It is not difficult to understand the terrific burden which falls upon the poorly developed girl on assuming the duties of the strong mature wife. At first she meets her marriage obligation, with all its attending consequences, to later repel it; wholly through the frailty of the generative system. Finally, either from pure repulsion or actual fear of maternity, the criminal abortion is accepted with all its harrowing effects upon mind, body and morals. Here it is that the General Practitioner can by positive and timely advice often ward off permanent invalidism or perhaps prevent the necessity of finally seeking surgical intervention. The constitution of woman at this period of her life has been referred to by Oliver Wendell Holmes thus, "The American female constitution which collapses just in the middle third of life and comes out vulcanized India rubber, if it happens to live through the period when health and strength are most wanted."

The third period, or menopause, presents to the General Practitioner a complex condition. In that the very symptoms the patient often notes, at this time, are referable to other or more remote causes and are perfectly insignificant as far as the change of life is concerned. She will again ignore symptoms of the very greatest import, believing them to be insignificant or a simple part of the on-coming change. In the first place it is the tendency of woman, after middle life, to make the menopause a store room for many of her ills and ailments, notwithstanding how far removed it may actually be from being the cause. She is prone to consider these minor ailments as indicative of the approaching change of life several years ahead of its actual occurrence. So as the months go by and the menopause does not become established, the general array of symptoms increase in number and severity and the patient passes into a condition very aptly described in an extract taken from Dr. S. Weir Mitchell's views. "No one knows woman who does not know sick

woman." She takes to being a patient naturally and comfortably, although if long ill she warps morally. Her doctor must often read the riot act to a mob of emotions; must look beyond drugs, for she is prone to think three pills a day easier than diet or regimen. He must listen and sympathize with her ills and with the joy of convalescence in order to be of real use to her. He must recognize how prone nervous and feeble women are to crave pity and love power; how prone, like all who have not learned the great lesson of bearing pain, they are to some narcotic habit. Out-of-door life, the camp cure, sewing for its moral value, and all that pertains to regimen and psychic influence must be at her doctor's command." Undoubtedly there are many distressing reflex symptoms directly referable to the approach of the establishing of the menopause which call for and demand appropriate treatment along hygienic and medicinal lines, but it is those cases of increase and frequent menstruation, occurring at this period of life which demand the greatest caution and place the most grievous responsibility upon the General Practitioner. The patient herself places little if any significance as a rule to this change in the flow. The General Practitioner, however, knowing that it is just at this time that carcinoma is most frequent and uterine tumors undergo changes in size and structure, should regard this symptom with greatest apprehension.

Finally, regarding one of the most important points in relation to the General Practioner to Gynecology—namely, Diagnosis. In view of his broad domain, it is possible that the General Practitioner may meet with any disease, whether surgical, medical, or gynecological. This, indeed, would be a terrific responsibility, necessitating a widespread knowledge and diagnostic skill reaching over the whole field of medicine, were it not for the specialist. One, who has devoted himself to one special line or sphere and who should be better able, by special training and equipment, to handle

those cases belonging to his special line of work. Both the General Practitioner and specialist work to one end—the relief of the suffering,—so that their relations should be one of cordial and harmonious cooperation. The General Practitioner will meet a number of acutely grave conditions, which though perhaps not demanding a positive diagnosis, will call forth at least a prompt recognition of the serious aspect, and the need for quick action. Such as in those cases of internal hemorrhage and ruptured extra-uterine pregnancies; ovarian cyst with twisted pedicle and ruptured pus tubes; appendicitis and peritonitis. There is no question that the greatest good the General Practitioner can render woman, and one of the greatest blessings he can offer mankind will be not only his own early recognition of carcinoma of the uterus, but to so impress and ingraft upon the laity the symptoms and the hopeless gravity when found late that the laity will, too, appreciate the imperative necessity of an early recognition of this disease.

In conclusion the relation of the General Practitioner to Gynecology should be the application of his knowledge to the narrow speciality, in such a way as to do the greatest good to the greatest number. In order to accomplish this both the General Practitioner and specialist should bear in mind the following—"The knowledge, which a man can use is the only real knowledge, the only knowledge which has life and growth in it and converts itself into practical power. The rest hangs like dust about the brain or dries like rain drops off the stones."

THE MEDICAL INFLUENCE OF THE NEGRO IN CONNECTION WITH ANÆMIA IN THE WHITE RACE.

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Mr. President and Gentlemen:—In responding to your kind invitation to return to North Carolina and to address your meeting, I invite your attention to a certain phase of the same subject upon which I spoke before you several years ago. In my former address I discussed the general subject of hook-worm disease. To-day I wish to speak on the negro as a factor in the spread of this malady and his resulting influence upon the health of the white race. In bringing this subject before you it is needless for me to state that I appeal to no race prejudice, but that I simply bring forward certain harsh, cold, scientific facts which must be faced, not only in the interest of the white but in the interest of the negro as well.

As many of you know, I have for some years past been especially interested in studying medico-zoological conditions in the rural districts of the South, and this work has led me to spend about a year living among the tenant whites. During these studies I have made inquiries among all classes of people regarding their ideas relative to the origin of the present impoverished financial and physical condition of the "crackers," "sand-hillers" and "barrenites," and the information obtained combined with my own investigations has led me to a conception of these people which is not altogether in harmony with the general opinion entertained regarding them. So far as I can analyze the subject these people are the joint product of certain medical and industrial conditions as follows:

In ante-bellum days, if a man was wealthy enough to own

slaves he was wealthy enough to own good plantation land. If not wealthy enough to own slaves, it is not reasonable to assume that he could buy the better class of farms. The latter people, therefore, would naturally be forced into the poorer lands, if owners, or to serve as overseers, to become tenants; and in general to compete with slave labor. Such seems to me to be the most reasonable of the several explanations I have heard regarding the origin of these people. In different parts of the South they are known as "shad-bellies," poor "Bukra," "poor whites," "crackers," "sand-hillers," "sand-Billies," "barrenites," "poor Johns," etc.

The old-time negro had a great contempt for the white man who could not own a slave, and this contempt culminated in the expression "poor white trash." This same contempt is reflected in the negro song, "I'd rather be a nigger than a poor white man."

The expression "poor white trash" has become very well known despite its offensive character, and unfortunately the average more fortunate whites, both those who know these people and those who have not seen them, have too commonly allowed their judgment of these people to become somewhat clouded by the judgment formed by the old slaves. In fact, very few persons have any sympathy for these people who have been repeatedly referred to in my presence as "lazy," "shiftless," "good for nothing," "indolent," "untrustworthy," etc. One Southerner whom I recently met stated that he had had twenty-five years experience with them and that he considered "they were not worth trying to help"; he was kind enough to inform me that I was wasting my time in living among them and studying their conditions. This reflects, in an exaggerated form, the average opinion I have encountered during my studies among these people, now carried on at various intervals for nearly six years, the total study amounting to about one year's time.

Actual experience among them, for the purpose of scientific study, and actual association with them, involving sleeping

in their homes, boarding with the "dirt-eater" and "snuff-dipper," playing with their children, visiting their schools, seeing them on farms, in mines, in mills, hospitals and orphanages have led me to a conception of them which is different from those just mentioned, and I am forced to take radical issue with any person who looks upon them as "lazy," "indolent" or "good for nothing," and I can not refrain from expressing surprise that any man should have twenty-five years experience with them and use so little intelligence and acumen as to come to the conclusion that they are "not worth trying to help."

Since these people are peculiar to the South, in order to understand them it is necessary to understand certain other factors which are peculiar to this same region. There are three factors in particular which come into consideration, namely: (1) The area under discussion presents the most intense negro population of any part of the country; (2) this area also presents the area of most intense hook-worm infection; and (3) the same area presents the most intense malaria infection of any portion of the country. The question now arises, In what relation do these four factors (the tenant white people, the negroes, hook-worms and malaria) stand to one another?

I need not argue to you the fact that both hook-worm disease and malaria are found both in the white and in the negro, for this is well established. I may, however, invite your especial attention to an important point, too often overlooked, namely, that these two great anæmia producing diseases which are so severe on the white are relatively less severe on the negro race. This fact, that the negro presents a *relative* immunity to the *physical effects* of these two infections which are so common to his race, is one of very great importance for it points us to a conclusion from which there is no escape, namely, that the negro race forms a great reservoir for the supply of these infections.

Take malaria, for instance. It is a well-established fact

that the malaria parasite is exceedingly common in the blood of negroes. It is a fact of common knowledge, which can be easily verified by any doubting Thomas, that the negro does not trouble himself very much to screen against mosquitoes. What is the result? Since the negro does not suffer from the effects of this infection so severely as does the white, the negro is not so likely as the white to come under medical treatment, accordingly he is more likely to form a source of infection to the mosquito; add to this the fact that he does not screen against mosquitoes so much as does the white, it is clear that relatively he forms a greater source of infection to the mosquito than does the white. Now, let a white man take what precautions he will against malaria in his family, the mosquitoes in the negro's house on the back street still form for this white man's family a source of danger over which he has practically no control. The conclusion is evident. Theoretically and practically the negro race, living side by side with the white race is, when viewed from the standpoint of malaria, a great and serious reservoir of infection.

Take, next, hook-worm disease. A given infection with this disease may put a white person in his grave or may make him so sick that he remains at home and it is likely to bring him under medical treatment. Thus, this infection is either brought to an end or it is more or less confined to the immediate premises of this particular family.

That same infection will produce less serious physical results on the negro, who will, therefore, not be so likely to be confined at home; and he will not be so likely to come under medical treatment. The conclusion naturally is that, relatively, the negro is, and from theoretical conditions necessarily must be, a greater spreader of hook-worm disease than is the white man.

The immense importance of this latter fact can be seen when we compare the white and the negro as a soil polluter. In this connection I would state that I have collected statistics for 366 farmhouses in North Carolina, South Carolina,

Georgia and Alabama, and I find that of these 366 cases only 115 houses, or 31.4 per cent, were provided with privies of any sort; in other words, 251 of these houses, or 68.5 per cent, had no privy, and on this account the soil pollution on these premises reached a theoretical maximum. Of the 366 farmhouses in question, my records show that 73 were occupied by whites and 83 by negroes, but I have no record of the race of the occupants of the remaining 210 houses. Of the 73 houses occupied by whites, 56.1 per cent, or 41 houses, had privies; and 43.8 per cent, or 32 houses, were without privies. Of the 83 negro houses 20.4 per cent, or 17 houses, had privies; while 79.5 per cent, or 66 houses, had no privy. In other words, the theoretical maximum of soil pollution was reached in 43.8 per cent of the houses occupied by whites, and in 79.5 per cent of the houses occupied by negroes. From these statistics it would appear that the negro is nearly twice the soil polluter that the white man is, and this conclusion is in harmony with what we know of the generally poorer condition of the negro privy when one is present, and also with the complaints so often made regarding the pollution of alleys in cities by the negro.

Comparing the white and the negro numerically as an inhabitant, we find that in the States of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana the average ratio is 1,000 whites to 833 negroes. The ratio in these States varies between 1,000 whites to 494 negroes in North Carolina, and 1,000 whites to 1,415 negroes in Mississippi.

From the foregoing data it is seen that in the area under discussion we have the following combination: (1) Two races (whites and negroes) are living side by side; (2) as inhabitants they bear the ratio of 1,000 whites to 833 negroes (a proportion of negroes far in excess of what exists in other States); (3) as soil polluters they bear the ratio of 438 (in whites) to 795 (in negroes); (4) two diseases (hook-worm disease spread by soil pollution, and malaria spread by mos-

quitoes) are present in high percentage; (5) these anæmia-producing diseases are especially severe on the white, but relatively less severe on the negro.

To my mind the foregoing combination of facts leads inevitably to the conclusion that the white race in the South is living under a hygienic handicap, which is not paralleled in any other part of the country, and were it not for the greater intelligence and better financial condition of the whites, whereby they are able to protect themselves more or less against these diseases by sanitary measures, it would be only a question of a few generations before this handicap would exterminate the whites from those portions of the South which are especially favorable to these infections.

These whites of higher education and in better financial condition are able to protect themselves against this handicap, the burden of which has therefore fallen more especially upon that class (namely, the rural white tenant class) which has been kept in financial impoverishment through generations of competition with negro labor, and the result is exactly what theory demands it should be, namely, the present impoverished physical condition of so many thousands of the tenant white people, especially those living in the sandy and mountainous districts where the sanitary arrangements are so inferior.

The physical condition of these people can be appreciated only by persons who have been among them. Those of us who have lived among them need not be surprised to find their blood from 10 to 70 per cent below normal. Nor need we be surprised upon entering a poor farm hovel to foresee death in many instances in 40 per cent of the children (namely, two of the five or four of the ten children of the family) before they reach twenty-one years of age. I visited one farm on which I found father, mother, five children and fifteen children's graves. I asked the physician what had killed these fifteen children, and he replied: "I do not know what the disease is, but if you can tell me what is killing *that*

girl there you will know what killed the other fifteen children." "*That girl there*" was a severe case of hook-worm disease in the dirt-eating stage. Think of it gentlemen! 75 per cent of the rising generation of this family had already paid the extreme penalty of soil pollution, and one further member of the family already had one foot in the grave.

Gentlemen, let any one call me a theorist if he will, but in all fairness to the tenant white class of the rural sand and piney woods districts of the South, let him first see the sights I have seen before he makes fun of those people and before he jokes about their sick and dying women and children. Before any man who claims to be humane considers these people "lazy," "good for nothing" and "not worth trying to help," let him reflect upon the following statistics, based on about 10,000 examinations I have recently made among this class of people:

1. At least 13 per cent (women over 20 years) to 18 per cent (girls 16 to 20 years) of these women of maternity age are suffering from the anæmia-producing hook-worm disease, which prevents them from properly nourishing their babes.

2. Of the girls under 16 years at least 18.7 per cent have this same infection, which thus adds a serious strain upon their bodies (in addition to the strain incident to their sex) and which tends to retard their physical development, so that many of them reach maturity two to five years late, and even after they have reached maturity this disease renders them irregular in their menstrual functions.

3. Of the boys under 16 years at least 29.4 per cent have this same infection, which inhibits both their physical and their mental growth.

4. Of the boys 16 to 20 years 20.7 per cent, and of the males over 20 years 5.8 per cent show these same symptoms which decrease their labor capacity and their military efficiency.

Now, my friends, in all kindness, let me submit to you a question for thoughtful consideration: Nearly a half-cen-

tury ago the country freed the slaves, but in these decades that have elapsed since then *what has our country done in order to better the conditions of the tens of thousands of the rural tenant whites who have been kept in financial poverty through competition with negro labor and in physical poverty through the two great anæmia-producing diseases for which the negro forms the great reservoir of infection?*

All honor to the few noble men and women who by great personal sacrifice are struggling to support efforts looking to a betterment of their condition; all honor to the few physicians who have let it be known that they will treat hook-worm cases among these people without professional fee; all honor to the Southern cotton mill which is enabling thousands of these people to earn an honest living, and thus to uplift themselves; but think a moment: *In comparison with what this country is doing for the negro of the South, for the Chinaman in Asia, and for other people of different races, what is our country doing in order to elevate these tens of thousands of people of our own race in our own country?*

Does it tend to elevate them if we refer to them as "lazy" and as "good for nothing?" Would it not help them more if we could send to the chaingang people who indulge in that kind of pseudo-wit?

Gentlemen, there is a rational solution to the problem before us, and I submit to you for consideration a plan which I maintain is well founded from a theoretical point of view and feasible from a practical point of view. It is the same plan which I submitted a few days ago to the Alabama State Medical Association and which that Association has unanimously endorsed. It is this:

Let us start out on the general principle that it is much easier to teach children than adults. With this truth in mind, I propose the introduction of a "Public Health Week" into every schoolroom in the South. During this week let us utilize the class in physiology in order to teach to the children the three great and fundamental principles of public health so important for the South. These principles are:

1. *Do not spit on the floor,* for this habit spreads tuberculosis and diphtheria.

2. *Do not pollute the soil,* for this habit spreads typhoid fever and ground itch, with its resulting hook-worm disease.

3. *Protect against mosquitoes,* for mosquitoes spread malaria, yellow fever, dengue and elephant foot.

Besides working through the schools, let us use every other means by which we can carry on a merciless campaign against soil pollution. In the last analysis, soil pollution is an evil in itself; it is in the nature of *"malum in se";* it is an "aggravated offense against the public welfare; hence it should be prohibited and made a crime, and any person guilty of polluting a highway or back alley should be sent to the chaingang.

Let us extend this campaign to the farms, especially, and if possible persuade, but if necessary compel the farmer to build a sanitary privy and to keep it clean.

Let us appeal to the clergy, to the lawyers, to the business men, and especially to the school-teachers and the mothers, to join in this campaign. If I can gain the mothers of the South for this movement, and be given a chance to do so, I will agree to practically eradicate hook-worm disease from the South in one generation's time, and by this eradication I will agree to elevate the condition of the rural tenant whites.

In conclusion, gentlemen, let me emphasize a very important point in the plan I propose, namely, that it is absolutely necessary to avoid any distinction between the whites and the negroes in this campaign of sanitary education, for:

(a) The white man who fails to recognize the important necessity of improving the sanitary conditions under which the negro is living, fails to go to the root of the evil, and he unconsciously invites disease and death, especially to the women and children of his own race; while

(b) The negro who fails to recognize the important necessity of improving the sanitary conditions under which the negro is living, overlooks the fact that he is placing a very serious

handicap in the way of a higher mental development of his race; for the point must not be forgotten that hook-worm disease, in addition to its physical effects, to which the negro is *relatively* immune, has also a serious effect upon the mentality, and it has not been shown that the negro is immune to this latter effect.

OUR MILK SUPPLY AND SOME OF ITS RELATIONS TO PUBLIC HEALTH.

BY TAIT BUTLER, STATE VETERINARIAN, RALEIGH, N. C.

In accepting the invitation of your Secretary, Dr. Lewis, to read a paper at this meeting on the public or market milk supply of the State, I did so with a distinct purpose in view. It is perhaps telling no secret, and it is certainly not meant offensively, if I state that the average practicing physician is none too familiar with the real problems involved in putting into the hands of consumers a wholesome milk supply. But this, in my opinion, is not of great importance. It is not necessary, however, desirable, that the physician possess expert dairy knowledge or that he be capable of performing the duties of a scientific dairy inspector. A much more important matter, as affecting any effort for the improvement of our milk supply, is that he have a full and accurate knowledge of the real importance of pure milk for the consumption of those under his care.

Many of those here have given special study to this subject. Others who are investigators have full knowledge regarding certain phases of it, but the general practitioners have not given that attention to the subject which its importance demands. Moreover, the general practitioner gets closer to the public than any other man and it is through him that the general public can be best reached; therefore in this paper I have decided to talk to the general practitioner and to assume the part of an agitator rather than an educator.

All freely admit the importance of a wholesome milk supply as a general proposition, but how many know fully and accurately the awful results of our criminal neglect in the past along this line? How many have an accurate knowledge of the quality, or lack of quality, of the milk now being sold throughout the State? How many realize the full measure

of filth which it carries and what that means in misery and death to the innocent babes who must consume it?

Gentlemen, it is not the ravings of a fanatic nor the extravagance of a sensationalist, but a conservative statement of terribly serious facts when I say to you that the almost total ignorance of dairy science on the part of our milk producers, the lack of knowledge of what constitutes first-class milk and the care it should receive on the part of consumers, and the almost criminal indifference and inertia of the medical profession who are the accepted guardians of the public health are seeds, the awful but legitimate harvest of which are ill health, misery and death to hundreds upon hundreds of innocent consumers during our long hot summers.

The indifference of the public generally, and the indifference and inactivity of the medical profession in particular, along the lines of milk and meat inspection, are little short of tragic and I wish I might say something that would help, in a small way at least, to arouse and increase interest in this long-neglected branch of sanitation.

There are three general ways in which the milk supply may have a direct relation to the public health:

1. It may be a means of carrying and transmitting disease from man to man, such for instance as typhoid fever, diphtheria, scarlet fever, cholera, etc.; but of these phases of our subject I shall take for granted you are better informed than I, and omit their discussion.

2. Milk may be a means of carrying and transmitting disease from cows to man, such as tuberculosis, anthrax, foot and mouth disease, cowpox, etc. Of these one alone is common, tuberculosis, of which I shall have something to say later.

3. Milk may cause disease in man by conveying disease-producing agents or materials, such as filth and the conditions which it favors for the growth of bacteria and the development of toxins and other deleterious substances, also the products of mammitis and other septic troubles.

Of the distinct diseases affecting the cow, which also affect man and which may be communicated from one to the other, tuberculosis is of first importance.

When Koch discovered the bacillus of tuberculosis and proclaimed the identity of bovine and human tuberculosis, there was little hesitancy in accepting a conclusion so closely in harmony with the experience and observation of scientific workers in both human and veterinary medicine. Later investigators called attention to the difficulty in transmitting human tuberculosis to bovines, and still later the fact was pointed out that the bacilli from bovine and human sources often possessed morphological and cultural peculiarities sufficient to differentiate them; but when Koch followed, in 1901, with the remarkable declaration that bovine and human tuberculosis were different and not intercommunicable, few scientific investigators were willing to accept the dictum on the insufficient evidence produced, and at once investigations were started all over the civilized world to determine the truth or falsity of Koch's declaration. In the meantime progress towards preventing the communication of bovine tuberculosis to man received a decided setback.

The results of the investigations stimulated by Koch's dogma indicate as clearly as the nature of the case will permit that bovine tuberculosis may be and is communicated to man.

It has been shown that the bacillus from human tuberculosis is capable of producing tuberculosis in many animals, but for no animal, unless man is the sole exception, is it so virulent as the bovine germ. If the bovine bacillus is more virulent for all other animals, including monkeys and apes, it very logically follows that it probably is also more virulent for man than the human bacillus.

Of course Koch has not recanted. He still maintains the position taken in 1901, but the fact is now pretty generally recognized that bovine tuberculosis may be a source of danger to man.

The next question to arise was naturally to what extent is bovine tuberculosis a source of infection to man?

In their efforts to show that bovine tuberculosis was rarely communicated to man the fact of the greater frequency of pulmonary than abdominal tuberculosis was pointed out, and the claim that intestinal tuberculosis of children, the greatest consumers of milk, was rare, were made much of.

Recently much evidence has been developed showing that intestinal or abdominal tuberculosis of children is not so rare as claimed by those who maintain that bovine and human tuberculosis are not intercommunicable.

And still further, to the dismay of those who cling to old beliefs because they are old, even the time-honored assumption that the chief mode of entrance of the infection agent is through the inhalation of germ-laden dust particles, has been challenged and met with an array of facts and reason which may well receive serious consideration by all those interested in the question of the relation of the milk supply to the public health.

It has been clearly shown that the introduction of the bacillus into any part of the body, blood vessels, intestines, abdominal cavity or even a part so remote as the tail of the cow, is generally followed by thoracic tuberculosis instead of necessarily tuberculosis at the point of entrance or of near by organs.

Again, when tuberculosis of the intestines is found, especially in children, the bovine germ, which may be recognized, is frequently found in these cases of human tuberculosis. Is this not more than passing strange if the bovine germ does not produce tuberculosis in the human?

In short, recent investigations show plainly that not only is bovine tuberculosis communicated to man, but that this is probably not so uncommon as the comparative infrequency of abdominal tuberculosis was thought to indicate.

To question the old inhalation theory of the entrance of the tubercle germ from sputum pulverized is, I know full

well among the medical men here, likely to lessen the respect which you will have for the other statements I may make, but I can not resist the temptation to state that it never did have any scientific evidence worthy of consideration to support it.

It is an old, well-known fact, that drying and sunlight rapidly kill tubercle bacilli. One hour of sunlight will kill tubercle bacilli in transparent layers of sputum, while five hours exposure to sunlight will kill the bacilli in thick opaque layers. Sputum is mixed with mucous, is tenacious and hard to pulverize unless thoroughly dried. Yet we accept the statement that tubercle bacilli resist this drying and pulverizing process to such an extent that this way, and this way almost exclusively, is tuberculosis thought to be introduced into the human system. The theory is not only not supported by facts, but is most unreasonable. Furthermore, if the tubercle germs enter by way of the air-cells, why is it that tuberculosis starts in the capillaries instead of in the air-cells? Why is it that tuberculosis starts in the apex of the lung, where there is a smaller proportion of air-cells, than in the base of the lungs?

Another discovery has recently been made; namely, that probably before the tubercle bacilli are expelled from the body in any considerable numbers through other channels, they may exist in large numbers in the manure. Years ago I remember reading in Novy's "Laboratory Work in Bacteriology" that there was a bacillus frequently found in cow manure that stained like the tubercle bacillus—very much like it indeed, because it probably was the tubercle bacillus.

Now, the chief filth in milk is cow manure. That cowy odor is usually plain, vulgar filthy cow dung.

In the face of these facts what is our position? We know that tuberculosis exists in our dairy herds; we know that when tuberculosis exists in a herd, owing to the passage of the bacilli through the udder and through the intestines and manure, which almost always contaminates the milk more or

less, milk from such a herd is almost certain to contain tubercle germs; we know that infants, the largest consumers of milk, have intestinal tuberculosis more frequently than adults, and that the bacillus causing this disease is frequently of the bovine type; in short, we know that our neglect to exclude tuberculosis cows from our herds is causing the death of many human beings, and yet we are doing nothing, literally nothing, to prove ourselves worthy the title of guardans of the public health.

The tuberculin test is the only means of detecting tuberculosis before the products of the cow are likely to be infective, but we are not forcing the dairymen of the State to do what is to their own financial interest to do—test their cattle and exclude the tuberculous animals.

Tuberculosis is not over-common in this State except in the dairy herds, and is not as prevalent there as in many States; but it will steadily increase unless controlled. Moreover, if we admit its *existence* even, and the *possibility* of its communication to the consumer of milk, we have no right to stand idly by and permit any human being to take that chance no matter how small the chance may be.

In my opinion diseases of the udder, and those conditions of milk included under the general term "filthy," are the most fruitful source of injurious effects upon the consumers of milk. All forms of garget, mammitis, or other diseases resulting in pus and other inflammatory products entering the milk, are unquestionably the source of much of the diarrhœal troubles of infants resulting from the consumption of impure milk. Filth, manure from the cows and stables, which is the most abundant and common contaminating material of unclean milk, has not in my opinion been given its full share of responsibility for the high death rate from diarrhœal diseases so fatal to young children. Especially is this so in North Carolina.

In short, tuberculosis, diseased udders and filth are the three main sources of danger to the consumers of milk in this State.

How are these conditions to be corrected? In the first place clean milk is worth more than dirty milk, and it costs more to produce it. Are our people willing to pay for clean milk? I believe we are now paying a price, eight to ten cents a quart, which entitles us to a fairly good quality of milk. If this is not enough to enable the producers to put clean milk on the market, then you, the guardians of the public health, must educate the public up to the point where it will pay for good milk.

In the second place, few of our dairymen know sufficient of dairy science and practice to enable them unassisted to put clean milk on the market. The general supply of milk can be improved, but for many years yet can not be brought up to the standard necessary for the feeding of infants and sick people. Comparatively few men anywhere are able to put such a quality of milk on the market. What is to be done?

First, start here to-day such a campaign for pure milk as will arouse public opinion, stimulate dairymen to greater efforts and result in a competent milk inspection and supervision in every town of 3,000 population in the State. This can be done and will improve the general condition of the milk supply. In every town where the demand will justify let a certified milk commission be established to encourage some one or more men to produce and put upon the market a first-class milk product. And last, as a temporary and doubtful expedient, if filthy milk must still be consumed by many, establish, under municipal control, where conditions render it practicable, a pasteurizing plant where all milk below a certain standard must be pasteurized before being sold. Pasteurizing will not make unclean milk clean, but it may lessen its injurious effects. If generally adopted it is likely to encourage filthy practices rather than correct them. It probably lessens the digestibility of the milk and is only advisable as the lesser of two evils. As between reasonably clean milk and pasteurized milk there is no question in my mind of the superiority of the former; but if it is still necessary to put

up with dirty milk then, by all means, pasteurize. The chief objection to it is that its use is likely to prevent as great an effort to secure clean milk as would be made were pasteurizing not practiced.

How is the general quality of the milk supply to be improved?

First, by a proper system of inspection. Three forms of knowledge are requisite for competent milk inspection. First, a knowledge of cows in health and disease, possessed by the veterinarian; second, a knowledge of dairy science and practice which should be possessed by the so-called practical dairyman, but in our State rarely is; third, a knowledge of milk, bacteriologically, chemically and microscopically.

The milk inspection of a municipality may well be administered by a milk commission; but if so, it should be made up of men chosen for their knowledge of the work. For such a physician a practical dairyman and a veterinarian are logically competent men. Or the administrative part of the work may be left to the city health officer, but the success and efficiency of any system of milk inspection depends on the efficiency of the inspector and the quality of the laboratory work done.

First there should be a frequent and thorough veterinary inspection of the cattle. The inspector should also be a practical scientific dairyman who has had experience in dairying. If it is claimed that such a man can not be employed then the milk inspection will fall short of a full success just to the extent that the inspector falls short of these requirements.

Our dairymen are not desirous of putting filthy milk on the market, but they don't know. The inspector must be able to *teach* and *lead* rather than try to *force rapid changes.*

In most instances too much importance or reliance is placed on laboratory examinations. These are essential, but they will not take the place of frequent and competent inspections of the dairies and the manner of handling the milk. Bacteriological examinations should be made for unquestion-

ably a high bacterial content is indicative of a high filth content. If there be a high bacterial content then the inspector must seek the cause and correct it. He must have accurate *dairy* knowledge and practical experience to do this.

A microscopic examination may be made, for a high leucocyte and streptococci content, with the presence of fibrin, indicates inflammation of the udder, but this is of most value when examinations are made of the milk of individual cows.

In the city of Raleigh we have a so-called milk inspection which is practically nothing more than a bacteriological examination and publicity of the results or findings. No competent inspector is employed, no tuberculin test is made of the cattle, and a violation of the regulations does not usually mean any sort of punishment, but with all this good has been accomplished. For instance, in 1906, after a complete neglect of duty for three months, the commission was forced to make a pretense of doing its duty by public criticism through the press, and from March 27th to April 27th, 1906, fifty samples, the first taken after this period of neglect, gave twenty with a bacterial count of over 1,000,000 per cc. From March 27th to April .., 1907, fifty samples gave seven with a bacterial count of over 1,000,000 per cc. From March 26th to April 28th, 1908, fifty samples gave eight with a count of over 1,000,000. In September, 1905, ten samples gave an average bacterial count of 1,111,500 per cc. In September, 1906, ten samples gave an average count of 846,000 per cc. In September, 1907, ten samples gave an average count of 164,000 per cc. In August, 1906, twenty-three samples gave an average count of 2,570,000. In August, 1907, nine samples gave an average count of 890,000 per cc.

An improvement, but what filth still exists! Fancy, during the months of March and April, milk from three to five hours old in which sixteen per cent of the samples have from one to two million bacteria to the cc!

A bacteriological examination of milk is of importance, but its chief value is lost unless supplemented by and done in cooperation with an intelligent dairy and cattle inspec-

tion. A high bacterial count means either age or filth and large numbers of liquifiers mean in all probability filth; and where dairies are not of fairly good grade, dairy practice rather than age influences most the bacterial count.

We must keep in mind that a healthy cow gives a wholesome product of fairly uniform quality. If the milk is put on the market in bad condition, or of greatly varying composition, it means bad dairy practice. Very frequently I hear of this physician or that one who insists that the cow shall receive no cotton seed meal, or no silage, or some other excellent food is tabooed. I have heard of this sort of thing in our city of Raleigh, and yet our system of handling milk makes it almost certain that the fat content of the milk from any one dairy may vary from 2.5 per cent to 8 per cent.

This has actually occurred and is due to the fact that milk is sold from a large can instead of being bottled at the dairy. The faucet being at the bottom of the can and the cream rising to the top, the customers first served get the 2.5 per cent milk, while the last get milk containing 8 per cent or 10 per cent butter fat. No sort of feeding will produce a change of over one-half of one per cent in the butter fat content; in fact, it is doubtful if any effect on the fat content can be regularly and consistently produced by any sort of feeding; therefore, it will avail most to give more attention to the handling of the milk for it will certainly mean discomfort if nothing more serious to any delicate infant to receive 2.5 per cent milk to-day and 8 per cent milk to-morrow.

Good milk will not be put on the market until the dairyman is required to bottle it at the dairy under proper sanitary and dairy conditions.

Some of the points that need attention in our North Carolina dairies are:

1. Test all cows with tuberculin and exclude the diseased ones. The North Carolina State Department of Agriculture will do that free of charge on certain reasonable conditions

2. Institute an intelligent inspection of the cows and exclude all those with any disease of the udder.

3. Prohibit the selling of milk except in bottles, and require that the milk be kept below a certain temperature.

4. Prohibit feeding during or just before milking.

5. Compel dairymen to keep their cattle clean; cows can be cleaned but milk can not.

6. Compel dairymen to wear clean clothes and wash their hands before milking.

7. Wipe the udders off with a damp cloth and use a covered milk pail.

These can only be brought about by an inspection capable of leading and teaching. We can not have entirely clean milk at once, but we might have cleaner milk with an intelligent effort.

As an illustration of how the cleanliness of milk is influenced by dairy practice, as indicated by the bacterial count, I desire to present the following charts, the data for which have been taken from Bulletins No. 42 and No. 48 of the Storrs, Conn., Agricultural Experiment Station.

It has been stated as an excuse for the filthy milk which so many of our dairymen are putting on the market that from lack of knowledge, capital, or other facilities, they could not produce and put clean milk on the market. These charts show that certain practices produced a wonderful improvement in the quality of the milk, as indicated by the bacterial count; and yet all these things could be done by our dairymen. They are all simple, practicable and inexpensive.

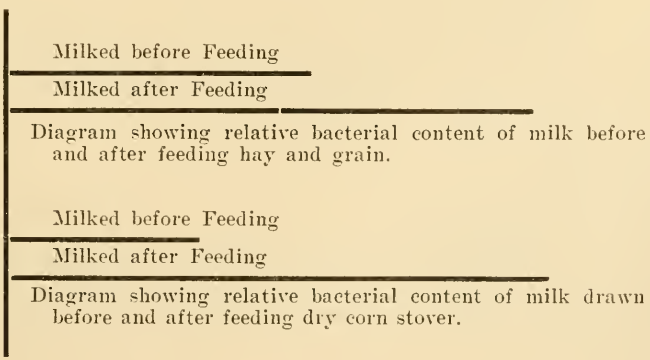

Diagram showing relative bacterial content of milk before and after feeding hay and grain.

Diagram showing relative bacterial content of milk drawn before and after feeding dry corn stover.

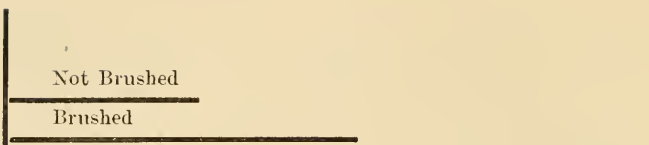

Diagram showing relative bacterial content of milk drawn immediately after the cows had been brushed and when no brushing was done at that time.

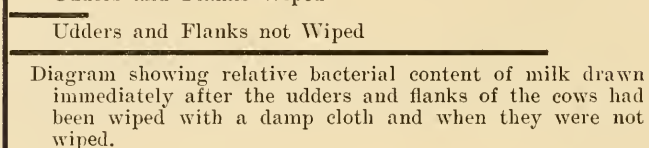

Diagram showing relative bacterial content of milk drawn immediately after the udders and flanks of the cows had been wiped with a damp cloth and when they were not wiped.

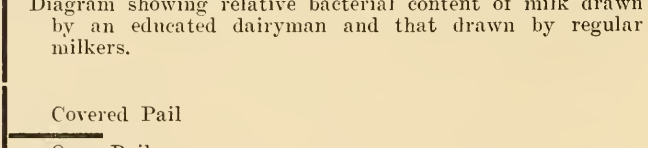

Diagram showing relative bacterial content of milk drawn by an educated dairyman and that drawn by regular milkers.

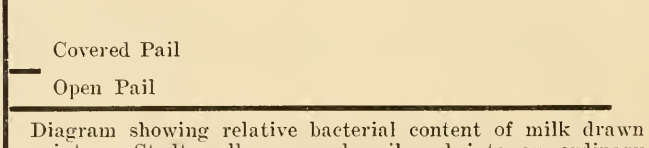

Diagram showing relative bacterial content of milk drawn into a Stadtmueller covered pail and into an ordinary open pail, in a dairy where extra care is given to cleanliness.

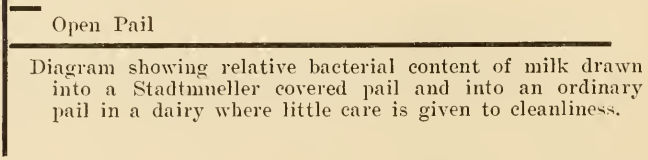

Diagram showing relative bacterial content of milk drawn into a Stadtmueller covered pail and into an ordinary pail in a dairy where considerable care is given to cleanliness.

Diagram showing relative bacterial content of milk drawn into a Stadtmueller covered pail and into an ordinary pail in a dairy where little care is given to cleanliness.

In all of the experiments furnishing the data upon which these diagrams are based more than ordinary care was taken to follow correct dairy practices. In all experiments, except in the ones comparing open and covered pails, the Stadtmueller covered pail was used, and all other conditions except those being tested were as near alike in all cases as it was possible to make them. In dairies where little regard is paid to cleanliness the results would still more forcibly demonstrate the effects which the methods of handling the milk have on its cleanliness and the bacterial count.

THE RELATION OF THE LABORATORY TO THE GENERAL PRACTITIONER.

BY WATSON S. RANKIN, M.D.,
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Introductory.

Mr. President, Ladies and Gentlemen:—This subject assumes the existence of two fields of work. In one we see doctor, patient and the sick or operating room; in the other we see micro-chemist and laboratory.

To question the right of either to a place in the practice of modern medicine would be analogous to questioning the right of antiseptics to a place in our pharmacopœia.

Since it is an unquestionable fact that the two are necessities—nothing less—in the right practice of the healing art, it behooves us to consider carefully and *decide* what the proper relation of these two—micro-chemist and general practitioner—is and *should be* to one another.

The Relation as It Is: That they are closely related there can be no doubt. Blood-kin by both birth and destiny, born of the same parent-need, yea born under the same stars, both coming in response to the cry, groan or sigh, and both going to its succor.

Although close in origin and destiny, betwixt the two their paths too often diverge, and too seldom are they found traveling the same path, too seldom do they lodge under the same covering.

Now, I believe it is a fact that few will deny, and none successfully controvert, that these two *naturally dependent* agencies have been rendered too *artifically independent*, an independence whose cause is false pride, indifference or ignorance, and whose cost is human life. Who among you has not heard the short-lived history of that chronic or persistent bronchitis "that went into consumption," but required from

three months to a year or more to make the trip, and on the way sowed the seed of death into the house for other crops of human organisms when the first one should follow the sower?

Who has not heard of that imaginary hybrid, typho-malaria, untreated by proper dietetic measures, until the correct diagnosis was first writ in a pool of blood flowing from a relaxed sphincter?

Who has not heard of the pale, stunted child so backward at school, who improved a little on the doctor's iron and then relapsed into its former self, run this course over and over again, when all that was needed to save the bloom of life's spring time for the fruit of life's summer was one dram of thymol and two doses of Epsom salts?

Most of these cases would not have occurred had there been a better understanding, a more active cooperation between the general practitioner and the laboratory.

Now, accepting the above claim, to wit, that the general practitioner and laboratory are met in that intimate relation which would best subserve the happiness and lives of our kind, it would logically be our next duty to inquire into the cause of this pathological independence of these two great systems of the medical organization.

Causes of Hurtful Separation: Now, in the careful consideration of this disease of the medical organization, to wit, loss of coordination of two of its most important and dependent systems, I am convinced that a faulty literature on the subject plays a most important etiological role.

Not faulty in its abundance, unless it appears to hide the truth like hay the needle, but faulty, in that as a rule it has treated this relation in a *general* way, treating it as the relation of laboratory to profession, apparently failing to recognize or at least properly emphasize that the laboratory to be of real value must be seen by the practitioner, not in its general relation, *but* in its relation to him, the individual, the unit of the profession, through which it must pass to its more general use and good.

Because this relation has been treated of in general terms, the rules governing it are general rules and not specific rules. General rules, dealing with the many, dividing responsibility to a minute division, lose the force of specific rules.

Well defined, recognized rules are not only a guide in the search for truth, but a propelling force, exactly parallel to one's sense of duty.

One more defect in the literature dealing with this relation and I pass to other causes: This last defect is an apparent oversight of the *various modifying factors* that control access to the laboratory.

Without discrimination all practitioners are supposed to use the laboratory, when their practices are as different in many cases as is the mercantile business in the country cross-roads store and the New York department store. A second potent cause of this separation of micro-chemist and practitioner is the latter's loss of confidence in the laboratory report.

This lack of faith is partly his own fault, but for the most part it is the fault of the laboratory. The practitioner errs in expecting too much from the laboratory, in being disappointed with frequent negative reports, apparently forgetting that the laboratory, like himself, is limited in the field of diagnosis.

The micro-chemist too frequently errs in his zeal to give satisfaction to retain a patronage undeserved, by giving the practitioner what he wants—a diagnosis—but one which the doctor's case subsequently proves was but a guess.

The Relation as It Should Be: This must be a relation thoroughly understood and accepted by both parties concerned, accepted not altogether as a matter of choice, but perforce of the reasons on which this relation must be built if it is ever established. Such an impregnable foundation of reason can exist only when it takes into account the various modifying factors controlling this relation. This established relation is not likely to be the product of the specialist.

We may look with more hope to the general practitioner, who started out with thorough laboratory training, or to the laboratory man who once knew the task of the general practitioner; in other words to those whose environment permits them to see both fields of work. The specialist in internal medicine with a train of young men greedy for his counsel and influence and ever ready to do the technical part of his laboratory work, and the salaried laboratory man in the endowed laboratory with numerous assistants, both alike are preaching what they do not and could not practice when they urge one man to labor in two fields of work. This permanent relation established on unquestionable facts will take note of the following conditions:

First. The practitioner who does not use the laboratory for its diagnostic uses does not give to his patients what he is due them, and what the medical profession affords them.

Second. That the pathological conditions present do not always indicate laboratory assistance. The various indications for laboratory appeal as they arise in the multiple disease conditions, would lead me too far afield to include them here. It is to be remembered, too, that until the State or charity does this work, the laboratory is for many beyond their financial reach, even though the pathological condition calls for laboratory consultation.

Third. The method of obtaining laboratory aid will vary with the individual practitioner. If the physician has time, training, and can afford to invest from one hundred and fifty to two hundred dollars in apparatus, he should do this work himself. The man especially well fitted to make this personal use of the laboratory is the young man just out of the hospital and laboratory. The cost is nothing like the cost of an electrical outfit, and in five years will have paid five dollars where the more expensive investment has paid one. On the other hand, if time, training, or apparatus is wanting, the physician should have the work done by some one else. If time is the factor in his way, if, as is usually the case, his

practice does not leave him the time for this work, perhaps a nurse or intelligent assistant may be trained to do much of the technical part of this work, such as blood counting, filtration and titration stomach contents, testing sp. gr., reaction, albumen, rough sugar and bile-test wine, with centrifugalization and sediment collection, etc. If this is not possible, certainly then it is the duty of the doctor to collect and send to the nearest competent laboratory his material for examination. Whenever there is doubt as to sending material to the laboratory for examination, let the doctor be governed by the Golden Rule. I do not believe with the majority of writers on this subject, that these busy practitioners should attempt this work. For these men the time would be more profitably spent in reading, in mastering the indications for and the meaning of laboratory findings, and in keeping pace with advancing medicine through the use of new text-books and good journals. Instead of going off for special courses in microscopy, let the busy man devote that time to perfecting his physical diagnosis, perhaps adding to this important branch the use of the ophthalmoscope, laryngoscope, proctoscope, wrethroscope and spryginograph. These things he must do on the field where he finds his patient or send his patient to another. He can send his microscopic work away, but retain his patient.

OBSTETRIC WORK FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.

BY A. B. CROOM, MAXTON, N. C.

This is a subject which should interest every medical man; for no section is without its share of such work, and to the general practitioner or family physician usually falls these duties.

Obstetrics, we all concede, is a line of our profession entirely distinct and yet very closely connected with the general practice of medicine. Still it is a line of work falling more on the surgical than the medical side.

I desire in these brief remarks to emphasize the surgical side and to point out or call attention to what the author regards a few of the most important points to be remembered in attending the usual run of lying-in cases.

1st. Remember that in complicated cases, when interference is necessary that an experienced and skilled obstetrician is required, and even when we feel ourselves thoroughly competent to do the said skilled piece of work, that an assistant should be called.

2d. Of still more importance is it to remember that nature is the great obstetrician and will, in the majority of cases, be able to pull the patient through without our "skilled assistance"; therefore do not interfere unnecessarily—do not be guilty of "meddlesome midwifery."

3d. Remember that from start to finish in any labor case there is nothing of more importance than asepsis. Here I may remark that while I am well aware that some of my friends regard this a matter of choice or some might say useless and unnecessary; still I wish to lay especial stress upon the use of sterile rubber gloves as a routine. It has been a great satisfaction to me in my few years experience to feel sure when finding a slight rise of temperature that it

could not be any infection coming from improper cleaning of my hands.

It is of course the duty of one who announces himself in this line of work to be ready to promptly meet all emergencies. The obstetric bag should be kept in thorough readiness. It should contain the usual articles as sterile gauze, cotton, perineal pads, nail brush, soap, bichloride tablets, and, in addition, such instruments as forceps, needles, silk or other suture material, etc.

In event of a tear of the perineum or cervix they should be immediately repaired. And before such repairs can be done they must first be found; therefore, do not fail to look carefully.

Preparations are made for care of the baby before the rush, and means of resuscitation should be at hand always—hot and cold water, a flannel wrap for the child, etc.

Post-partum hemorrhage should always be thought of in time to avoid it. The bladder and rectum should be emptied at the beginning of labor. Quick and vigorous kneading of the uterus as soon as the second stage is past should be continued through the third stage, and further, until the contraction is firm and a hard uterus is felt. A routine dose of ergot after the placenta is delivered is my practice. It may save trouble and can not do harm.

The after treatment of these cases is of importance. The duty of the attending obstetrician is by no means done when his patient is safely delivered and comfortable.

Perineal pads should be applied immediately after the patient is cleaned up and before any change of clothing and bedding. These should be used during the entire puerperal period and changed as frequently as indicated—each few hours during the first day or two—and thereafter as necessary, two or three times daily. The patient should be kept quietly and comfortably in bed, not remaining in any one position long enough to allow a slight displacement to give trouble in the future. The diet should be regulated largely

by the condition of the patient—the breasts or rather the milk supply being the chief index. If the milk is scanty, a liquid diet—cocoa, tea, milk, etc. If abundant, and breasts are giving pain, a dry diet is indicated.

The most normal cases should remain in bed for ten (10) days and should not show the least rise of temperature.

The practice of giving a saline or castor oil purge on the second day is a good one and often saves a slight rise of a half or one degree in the temperature. A rise should be regarded with suspicion, and if the odor of the lochia indicates the least trouble, especially if we have a chill, intra-uterine douches of hot saline solution should be promptly and frequently employed until all temperature and odor are gone.

With proper technique we should not have any run of temperature, and the patient may be dismissed on the tenth day.

THE RELATION OF THE OPTHALMOLOGIST TO THE GENERAL PRACTITIONER.

BY GAILLARD S. TENNANT, M.D., ASHEVILLE, N. C.

In striving to throw out some aids to the general practitioner in picking out those cases whose welfare may demand the specialist's attention, it will be necessary, first of all, to attempt some loose classification, both as to physician and patients.

In the first place, the physician who does not understand and practice the use of oblique illumination with a two or three-inch focus lens in examining his eye patients belongs to a separate class. When he attempts to diagnose eye diseases he places himself in the same class with the man who would diagnose lung troubles without the use of auscultation or percussion. He may be able to diagnose an ordinary squint; he may sometimes find foreign bodies, but he can not tell when he has removed them; he may diagnose gonorrhœal opthalmia, but he can not treat it intelligently; he may be reasonably sure of his diagnosis of simple catarrhal conjunctivitis if it is prevalent. In short, his sphere of active usefulness is very limited, and his plain duty, if his field is far removed from a specialist, is to procure an ordinary convex lens of 1 1-2 or 2-inch diameter and 2 or 3-inch focus, and, bearing in mind a little local anatomy, see how much it will reveal in a moderately darkened room aided by a common lamp and a little practice.

To another class in need of some suggestions belongs the physician who refers many of his cases to the optician. A good plan for him to follow would be to close up his office and only attend to his very ill patients, referring his office patients to the druggist. The great majority of the profession, however, are familiar enough with the commoner forms of eye trouble to diagnose them correctly with what means

they have at hand, and understand the fundamental rules of ocular pathology well enough to catch the import of the danger signals in its connection. Their mistakes are generally errors of judgment, and to encourage the cultivation of this quality by men of this stamp is the aim of the remarks following.

It will be necessary to modify most of the suggestions in accordance with the distance from a competent oculist or other difficulties in the way of special assistance.

As to classification of patients, nearly all the cases referred to the specialist belong in one or the other of these classes: (1) Those needing special care or treatment; (2) those referred for aid in or confirmation of diagnosis or prognosis in some general disease or injury.

In this connection it would be well for many, especially those at a distance, to bear in mind that there is usually a clearly defined line between these two classes, which should be explained to patients of the latter class, who often expect some direct benefit to result from an examination, in place of regarding it as but a means to an often remote benefit.

In discussing the first class of cases many of the commoner diseases will be taken up and the salient points dwelt upon where the work of the general practitioner and the specialist seem to come together.

Lids and Lachrymal Apparatus.—Styes, the commonest of the lid affections, can often be aborted; but when they have developed every one should know where and how to open them. It should be borne in mind that successive crops of styes in an otherwise healthy person are indicative of eye strain or some other local irritation. Lid tumors may be removed successfully by any one who understands their thorough extirpation by dissection or curettage—from the inside of the lid and not through the cutaneous surface, as is sometimes done.

Lachrymal abscess may be temporarily relieved by any one, but its sequelæ are so persistent that the profession gen-

erally considers it a privilege to shove the case off on any one who will take it. Any interference with the proper drainage of the tears is serious, and though some cases of stenosis of the canaliculus yield quickly to dilatation, permanent relief generally requires from one to two months of constant treatment, and from three to five months of intermittent treatment.

There are always many of these sufferers remote from the specialist who could be cured by the local man of surgical instincts.

Conjunctiva.—The treatment of the milder forms of conjunctivitis is of course optional with the physician, especially during an epidemic, but not unless he is prepared to say that there is not a minute foreign body present or an incipient iritis. Too often a painless iritis is mistaken for conjunctivitis until permanent adhesions have formed with disastrous results. Purulent opthalmia, both in the new-born babe and the adult, is so dangerous that a suspicion of its presence should call for immediate and close attention. Its proper treatment entails a constant watchfulness and delicacy of manipulation that should properly be shared with or turned over to the specialist along with the responsibility for the uncertain results.

Cornea.—It is hardly saying too much to state that all affections of the cornea should belong exclusively to the province of the specialist. It is unique in its structure, its physiology and its pathology. Its complex circulation, innervation and functions make of it a lifelong study, and nothing in the realm of medicine is more gratifying than the successful results attending wide experience in treating the various forms of keratitis and the many varieties of corneal ulcer. On the contrary, nothing is more disheartening than the intractibility of these same conditions in inexperienced hands. It should be borne in mind that while in most corneal diseases the danger is not great, there are certain infectious pro-

cesses which act rapidly and fatally as to sight if not properly handled.

Iris.—Every physician should be able to diagnose iritis, and at least take the first steps toward preventing the evil effects sure to follow every neglected case. Too often the sufferer only falls into competent hands after permanent adhesions have formed, and the disease extended backward through the uveal tract. He should look in every suspicious case for the three danger signals: the sluggish or immobile pupil, the discolored iris and the temporo-frontal pain; and finding them, or one of them, should either immediately begin active treatment or refer the case to the specialist. He should remember, too, that the painless cases are generally the most far-reaching in their consequences.

Lens.—The patient with cataract should of course be sent to the specialist, though not necessarily to a distant city. Let the local eye man at least tell him whether or not it be ripe.

Diseases of the Retina, Choroid and Optic Nerve may be passed over. Mention should be made, though, of the importance and success of early and radical treatment in many of these conditions, especially in the neuritis from tobacco, alcohol or other poisons.

Injuries, Wounds and Foreign Bodies.—All injuries of the eyeball should be referred to the most competent man at the earliest moment, it being impossible for the average physician to bear in mind the numerous little points on which the preservation of the sight may depend. Especially is this true of wounds made with splinters of wood and the like, and of imbedded foreign bodies, where examination with a two-inch loup is imperative. Without the use of the loup no one can be certain of the complete removal of foreign particles no matter how simple it may seem.

Functional Derangements and Their Reflex Symptoms.—On this threadbare topic it is hard to say anything new or attractive, yet it is the most important division of the subject and should not be slighted. Eye-strain has been pa-

raded, chained to the chariot of many an advertising hero this score of years as the cause of every ill connected with the nervous system, whether wrongfully or not, it were idle to discuss in a general way. Suffice it to say that it is so intimately connected with most cases of neurasthenia that no careful and thorough worker should overlook it in unraveling the vague and tangled symptoms of the neurotic.

In the case of headaches the connection is usually obvious, though the manifestations are various, as the following hasty attempt at classification will show: (1) Temporofrontal headaches, coming on immediately after excessive or even ordinary use of the eyes, and usually subsiding after short rest; (2) ill-defined, general headache, coming on in the same way but of irregular duration; (3) the headache that lasts the whole of the next day after some unusually close application; (4) general headache, appearing at a regular time each day, be it morning, noon or night, and lasting several hours; (5) the dull ache that continues day and night through weeks or months; (6) pain and soreness in the occipital and cervical regions, generally persistent; (7) headaches at night after a day spent in travel or some unusual occupation; (8) a condition occasionally seen in which the pain is as sudden, as severe and as persistent as that of meningeal origin.

Presenting as they do this diversity, it will be seen that eye headaches are not always easy to pick out. The habitual sufferer should be carefully examined, grave disorders eliminated, digestive and excretory functions looked into, and all sources of so-called neuralgic pain sought for; these failing, the case is one for the oculist, and the result, if time and care enough be given to the task, will usually be the finding of some defect to account for the trouble. Headaches from catarrhal involvement of the accessory sinuses closely resemble some of the above, but are fortunately rare.

Periodic headaches of the migraine type are sometimes found in which eye-strain plays an important if secondary role.

In order to prove the connection in cases of constant or daily suffering the following plan has been found valuable to those at a distance from the specialist: Atropin is instilled daily, and if the trouble is due in any measure to the eyes some relief or even total relief will come in from two to fourteen days. Proper precautions against exposure to bright light must be taken or the test is worthless. Nor should one fail to sound the old warning as to the development of glaucomatous symptoms. If relieved, the patient should be sent to the oculist at once to save further application of the cycloplegic for the determination of correctible errors.

A certain ill defined and persistent nausea seems to be almost as directly dependent on the eye-strain as headache.

The family physician and the specialist should consult together oftener, especially in the corneal affections of childhood, and in all cases of known or suspected syphilistic origin; in other words, wherever heredity comes into play and where active and far-reaching medication is to be undertaken, a knowledge of family weaknesses is of vital importance in treating children; and in beginning specific treatment in the adult the specialist is apt to use heroic measures unless warned of some contra-indication; then, too, the victim of syphilis should not be left to himself as soon as his eye symptoms subside.

Turning now to those cases where an examination of the eye and its functions may reveal some points of diagnostic or prognostic value, irrespective of the presence of ocular symptoms, be they mild or grave, a wide field opens up. Broadly speaking, in every chronic disease and many acute ones in which the blood pressure or vessels may be affected to the point of leakage, thrombus or embolism, these processes are apt to take place in the retina where their presence can be immediately detected and their progress closely watched. In arterio-sclerosis, of whatever origin, in fatty degeneration, diabetes and all forms of kidney disease, these symptoms may be of particular value. Not infrequently the presence

of one of these maladies is first discovered in the course of an opthalmic examination; and, while the microscope has largely displaced other methods in the diagnosis of Bright's disease, still in many cases the nature and probable course of the disease can be made out with the opthalmoscope.

So intimately connected are most forms of disease of the brain and nervous system with varicus ocular phenomena that the neurologist or he who would intelligently treat any serious nervous disease, be it organic or functional, must either be able himself to correctly test the eye reflexes and muscles, and map out the field of vision, or else have some one at hand who can do it for him.

In tabes and multiple sclerosis, diagnosis as well as prognosis may depend on the eye symptoms, while some cases of hysteria defy every examination but that of the visual field.

In every case of suspected brain tumor the same tests must be applied at the earliest moment, for many minute growths can be positively located; whereas, later the general pressure due to their size or long standing obscures all other symptoms.

In injuries and suspected fractures this state of affairs, engorgement of retinal vessels or choked disc, often obscures absolute location, though sometimes paresis of a single muscle or group of ocular muscles or defect in the field of vision may point to the exact seat and nature of the injury.

In conclusion the writer would enter a plea for a closer relationship and understanding between physician and opthalmologist in all cases. A common experience illustrates the need of this cooperation. For instance, a patient beginning to suffer from the eye trouble dependent on a facial paralysis is referred to the specialist without any further instructions than that he have something done for his eye. In this case all three parties concerned are at sea in separate boats, out of hailing distance, and much time and energy are lost in bringing them together.

AN OPINION AS TO THE ULTIMATE RESULTS OBTAINED FROM SURGICAL, IN COMPARISON WITH MEDICAL TREATMENT, IN CERTAIN OVARIAN DISEASES AND IN ALL OVARIAN NEUROSES.

BY J. ALLISON HODGES, M.D.,

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The best method for the treatment of ovarian diseases and neuroses is, and always has been, a problem for the profession.

I am in no sense an opponent of discriminating and skilled surgery in these cases, nor do I decry the brilliant results often obtained; but an experience of a number of years in the treatment of this class of patients, coming to me in the various stages of the acute and chronic manifestations, and coming, also, from the hands of many of the most brilliant operators in this country, have convinced me that surgery has been overrated in their cure, and that, unless there is a marked pathological condition of degeneration or destruction, this line of treatment has been largely unavailing and impotent, and that medical lines of treatment, when proper discrimination has been used and careful regimen carried out, produce the best results.

To speak plainly, I believe that specialism has run mad, and the further fact that therapeutic nihilism prevails in the minds of many physicians and surgeons, has often been the precipitate cause of surgical intervention in many of these cases, which should have had the benefit, certainly, of more careful, more systematic and more enthusiastic medical treatment before being submitted to surgery as a *"dernier resort."*

It is my opinion that for a proper diagnosis and consequent successful treatment this class of cases requires more knowledge of the fundamental principles of the basic ele-

ments of medical and surgical science than almost any other, and that success can not even be hoped for unless each case is considered upon its special and individual merits.

It is a mistake to enter upon their treatment believing that nothing will avail short of surgery, which often is the despair of curative medicine. Medical men have usually been more dilatory, or at least more modest, than the surgeons in advancing their views and advocating their claims, and the result has been obvious.

It is likewise a fact that the surgical method of treatment frequently appears to be an excuse for lack of interest, industry and discriminating intelligence on the part of the physician, and that it often appeals to us as an easy method of getting ourselves out of a perplexing situation.

Most medical men are not fully-rounded physicians and surgeons, and it is equally true that most surgeons are not fully equipped in the whole realm of medicine, consequently errors of judgment in treatment are as easy as errors in diagnosis.

Oftentimes surgeons are not fitted by practice to study the medical side of a case, or are too prone to ignore the medical points in evidence, just as the physician is often ignorant or unpracticed in the surgical features of such cases.

In other words, there is frequently a lack of skilled knowledge in diagnosis on both sides, and the prevalent idea in our profession, both medically and surgically speaking, that the correction or removal of some *one* abnormality will solve the difficulty, is the basis of many of the undesirable results seen in these cases. I have not tabulated any series of cases for this paper, for, while the list might be startling, it would not be conclusive nor convincing to many who have not personally examined them and made their own diagnoses.

It is my belief that too little attention has been given to the scientific and clinical study of the individual cases by both physicians and surgeons, and that a grave mistake is frequently made in submitting the patient to the surgical

procedure too early, for the fact is often and deplorably overlooked that the surgical operation, especially if unsuccessful, robs the poor patient of the last despairing hope of health.

The realization of this by many patients, particularly those of a neurotic temperament, removes all hope or effort, and induces a resultant train of nervous and mental symptoms compared to which the former state of chronic invalidism was but a trifle.

In brief, then, the successful treatment of these cases requires not only a complete and continuous medical and surgical study of the special symptoms, but also of the individual temperament of each patient, as well as a hopeful and enthusiastic spirit of management in a carefully planned and well-developed line of treatment, exhausting every means at hand for the alleviation of physical suffering before submitting the patient to the alternative of surgery, unless there be marked evidences of a pathological condition urgently requiring it.

I am aware that many of these patients fade away, carrying along with them the reputation of the physician and the silent evidences of his lack of discrimination; but still I believe that if the physician could impress his patients with the fact that, although they are able to be on their feet, they have symptoms of an illness which is just as definite and just as logical as would be the evident signs and symptoms of a pneumonia, for instance, and that, though their symptoms are different from the usual signs and symptoms of illness, still that, if these patients would consent to be guided by the careful advice and treatment of their physician, the ultimate results would be as beneficial and lasting as in the commoner forms of disease.

In my opinion we, as physicians, are to blame for not impressing, and gravely impressing, these patients with the seriousness of their condition, and not insisting upon the enforcement of our directions and the necessity of the patient's full cooperation.

If the physician be lazy, or too little interested to properly manage the case, it would be better for himself and far better for the patient that he should not in any manner attempt its treatment.

I believe further that with a proper appreciation of these facts by the physician and a considerate cooperation from the patient, we could in most of these cases produce results that would be as brilliant as ever could be accomplished, in occasional cases, by means of surgery.

Meddlesome pelvic interference by the physician in the treatment of these cases is no less to be countenanced than precipitate surgical intervention by the surgeon, for I believe that he is a wise man who, recognizing an oophoritis, will allow the uterus, for example, no matter how greatly displaced it may be, to remain just as he happens to find it, and will address himself to the ovary alone.

Relieve the patient first of her intolerable suffering and despondency, thus securing her sincere regard and cooperation, and there will be time enough left to rectify other matters.

I do not believe that the cause of the long and varying train of symptoms referable to ovarian disease is usually found within the uterus, however misplaced it may be or in however great a degree its mucous membrane has degenerated, for it seems to me to have been frequently demonstrated that a retro-displacement and oophoritis are entirely distinct troubles, each characterized by peculiar phenomena, and each calling for separate treatment.

I have found pessaries to be only *exceptionally* beneficial, and more often that their indiscriminate use and not infrequent maladjustment have been the exciting cause of serious disease.

I do believe, however, that in prolapse of the ovary, in hyperæmia or congestion, in oophoritis, acute and chronic, as well as in oophoralgia and ovarian neuroses, great and lasting benefit has been obtained along medical and hygienic lines of treatment.

Absolute rest, full feeding, proper eliminative measures, hot vaginal douchings, not pints, but gallons, medicated tampons of ichthyol-glycerin, painting the vaginal vault with iodine, repeated small fly blisters to the iliac region, the use of the galvanic current of about fifty milli-amperes, massage, unless blood or pus has accumulated in the Fallopian tube, where, of course, this measure is contra-indicated, as there is danger of fluid being pressed into the peritoneal cavity, graduated gymnastics, etc., together with the administration of tonics, the very careful use of nervines, the chloride of gold, the daily use of three to six tablets of the desicated parotid gland substance of sheep, systematic hydro-therapeutic applications, etc., are all in turn and as required potent agencies for palliation as well as cure.

In conclusion, my experience has taught me, and this paper is intended not as a dogmatic presentation of the subject, but simply as a record of my personal experience, that both physicians and surgeons do not frequently appreciate the medical and psychic treatment and management of these cases, for in most instances, except with the qualifications stated above, the surgical treatment in the end produces no better results than the medical, and often robs the patient of the last hope, leaving her a physical and mental wreck, even if cured, so to speak, anatomically. This result is wholly disappointing, and is only changing the clinical picture of the disease, substituting oftentimes for painful manifestations those symptoms resulting from a morbid hopelessness for relief, the last stage being worse than the former.

In some few cases nothing but an operation will cure the patient, and when, after careful treatment and discriminating study of the case, such a fact is recognized, it is nothing short of ignorance or prejudice to deny the patient the benefit of an operation for possible cure; but even the surgeon, in his work, should be guided by the rules of the strictest conservatism, and should not forget, as is so often done, that the cure is not completed when the uterus or ovary is replaced

or extirpated, but that to accomplish the best results and to avoid as well the recurrence of habit symptoms medicinal agencies must be called into requisition.

Only in this way, then, by medical lines of treatment at first, fully and faithfully administered, afterwards by surgical methods, if the former have proved futile, and by both, if the latter become necessary, can the end aimed at, complete restoration to health, be obtained.

To summarize, I believe that (1) too little time and skill are usually expended by both physicians and surgeons in the proper diagnosis of these cases; (2) the proper diagnosis requires a critical consideration, not only of the pathological conditions present, but also of the individual temperament of the patient in question; (3) each case must be considered upon its special and individual merits, and it must be remembered that the correction or removal of a single pelvic abnormality does not often effect a cure; (4) meddlesome pelvic interference by both physicians and surgeons in the treatment of these cases is to be condemned, for the patient first requires systemic treatment and management; (5) certain ovarian diseases, as mentioned, and most ovarian neuroses do not usually require operative measures, better results being obtained by proper and continuous lines of medical treatment; (6) surgical measures, if decided upon, are often undertaken without sufficient constitutional preparation of the patient for the operation; (7) frequently these operations are too radical, and are undertaken before medical measures have been given a full and fair trial, and are graver than usually considered, for the resort to surgery robs the patient of the last hope for health; and if unsuccessful induces a train of symptoms more serious than the original condition; (8) if a surgical operation is decided upon, the nonreference of the case back to the family physician for final cure is frequently a serious mistake, for otherwise only an anatomical cure is effected, and not a physical and psychic one; (9) to obtain the best and most permanent results it is necessary

that the family physician, who first sees these cases, should use all available means for their cure and for the prevention of threatening complications, and that if these do arise and surgical methods are indicated, there should be harmonious co-operation between the referring and attending consultants both in the proposed treatment and subsequent management of them.

THE GENERAL PRACTITIONER AS A SURGEON.

BY EDMUND HARRISON, M.D., GREENSBORO, N. C.

Mr. President, Ladies and Gentlemen:—About twenty-four hundred years ago a great physician subscribed to a great oath, and in this oath we find the following: "I will not cut those suffering with stone in the bladder, but will leave that for special operators."

It is very evident from the preceding that, while Hippocrates stuck to the straight and narrow way of the general practitioner, there were other physicians at that time who did branch out into special lines, and by so doing incurred the displeasure of the father of medicine; but at the present time a physican can be in good standing without endorsing this clause in the oath of Hippocrates, which fact seems to make it appear that the general man is slowly becoming independent, and perhaps, in the course of twenty-four hundred years more, may be permitted to do even an appendectomy without having to apologize for his presumption; yet, within the short period of years measured by my professional life (and I am a very young doctor), the surgeon has been raised from the level of the physician and placed upon a pinnacle so high above him that sometimes the surgeon himself has difficulty in recognizing this good man in the dim distance below.

There are now, and always will be, three classes of general practitioners:

The first and largest class embraces those who do their own simple surgical work.

The next largest (and much too large) is composed of those who do anything and everything from dispensing their own teething powders to performing a pan-hysterectomy.

The third and smallest class claims those who shiver at the sight of a scalpel, but bow down and worship the scalper.

The last two classes are too much for my comprehension, so my remarks will refer chiefly to class number one.

If we glance at the papers of the North Carolina towns we find that the professional cards of the general practitioners read:

"Dr. ....., Physician and Surgeon" (with appendages). If the card is legitimate I see no objection to the "and surgeon," for I don't believe that the time can or ever should come when the family physician will feel it his duty to refuse to treat the simple surgical cases that he meets with in his daily rounds.

Surgery is decidedly more attractive than medicine. It is much more exact (and less exacting); it allows us to exercise our organs of special sense to a greater extent; its results are quicker and more apparent; therefore, more flattering; it inspires the laity with more awe; and, finally, it pays fees which, when compared with medical fees, would alone indicate two different professions.

For these reasons the overworked, unnoticed and underpaid doctor in general practice too often attempts more surgery than either his skill or experience warrants, the patient getting the rest—requiescat in pace—the preacher the prominence, and the undertaker the big fee. Then, too, the medical colleges have allowed surgery to claim too much of the student's time; so much so that the recent graduate, who can not make a diagnosis in the simplest medical cases, does not hesitate to attempt the most dangerous surgical operations.

As surgery is much more of an art than a science, and medicine much more of a science than an art, the surgeon should serve a much longer apprenticeship for *he* must learn from watching and helping others.

In view of all these things how much surgery, then, should the general practitioner do? For obvious reasons the surgeon should not decide this question; if we care to maintain peace in the family our brother physician must not attempt it;

we can not seek the aid of the law, for it has failed to control even the quacks and humbugs; then, all that is left is the individual conscience, undistorted by ambition or smothered by self-interest; a conscience that weighs even the insignificant danger of an anesthetic; a conscience that is not satisfied with merely the life of the patient, but looks into the future years of that life; a conscience that realizes that an ovary is more than a small particle of offending tissue, or that weakened abdominal walls may transform an industrious mechanic into a whimpering invalid. Such a conscience, whether "Medical" or "Surgical," must answer this question.

Every general practitioner should keep fresh in his mind the principles of surgery, and he should be as surgically clean as is the abdominal surgeon, for he never knows when an emergency will forbid his passing the responsibility to the specialist, and force upon him the opportunity to save a human life.

It is extremely seldom that the difficult and dangerous surgical operations can not wait for the surgeon to be called, and it is equally seldom that emergency surgery is of such technical nature that the good general practitioner can not meet the requirements of the case with less danger to the patient than would be involved by waiting for the surgeon; therefore, I consider emergency surgery a part of general practice, and in the country districts and towns too small to support the "Simon-pure" surgeon circumstances so demand.

The family physician is the adviser of his clientele, and his opinion is held above that of the surgeon, even when the case is a surgical one; therefore he should know thoroughly the theory of surgery; but he must be a conservative man, able to protect his patient from the radical ideas of the extremist; and yet what could be more radical than for this family doctor, who operates possibly once in two months, to perform an abdominal section in order to save himself the embarrassment of having to confess that there is another who can do it better.

Let the interests of the patient be the guide, and the doctor will certainly know his limitations in surgery; but let his own ambitious interests lead him and soon he will believe that his ability has no limit.

Circumstances and surroundings compel some physicians to do more surgery than others; and again, some physicians, by reason of their natural gifts or better training, are much more capable than others; but, presuming that a surgeon is available, and that the general practitioner knows the principles of surgery and of honor, then my rule would be:

Let the general practitioner do the surgery that he knows he can do well, but when there is a vestige of doubt in his mind as to his ability, then, in justice to his patient, his profession and to himself, he should seek the aid of the specialist; nor should procrastination render this aid futile, and bring upon both physician and surgeon the discredit that so often follows the unsuccessful surgical operation.

THE RELATION OF THE SURGEON TO THE GENERAL PRACTITIONER.

BY T. E. W. BROWN, M D., ASHEVILLE, N. C.

Mr. President and Members of the Society:—On looking at the title of this paper as given in the program I have no doubt but that many of you are wondering which phase of the many and complex relations which exist between physician and surgeon will be considered. I will deal with that relation which must exist to bring about a perfect or nearly perfect cure in a patient that has undergone an operation. This relation, like many others that exist between them, is hard to define, and I shall not presume to lay down rules nor to make any final disposition of it. I shall simply direct your attention to it.

Let me first call your attention to the word "cure." What do we mean by it? What does the patient consider a cure?

I can best explain by quoting freely from a recent article by Dr. James G. Mumford, Boston. He says:

"I take it that a cure is the important end of all therapeutic endeavor: a perfect cure is the summum bonum onum, but is it not true that a large proportion of our cures are relative only?

"The man with a disabling recurrent appendicitis is absolutely cured of all pain and digestive distress through the removal of the appendix. The man with gangrene of the foot is relatively cured by amputation, though he be left maimed and halt. The woman with an ovarian cyst enjoys an anatomical cure when the tumor has been excised and the wound has healed kindly and soundly, though an unessential organ has been removed. All these are clinical cures, are cures from the surgeon's point of view; but just here there enters into the problem an element of wide-reaching metaphysical significance. The ills of life, like all the so-called

facts of life, are in direct relation and are proportionate to our experiences. The man who has just lost his appendix, if he lacks poise and clear vision, feels that he has been through a grievous crisis; that he has suffered a great cruelty in the operation; that the sanctity of his vitals has been violated, and that he can never again be what he was. The woman who has lost an ovary believes herself to have been unsexed; she has heard tales of changes of temperament; of coarsening features; of mannish tendencies, or perhaps she thinks a full set of ovaries essential to sound health and the bearing of womanly cares. She looks forward to some misterious ill-defined change in herself, or to invalidism, and the reassuring farewell words of the surgeon fail to turn her from the expected melancholy course."

Such cases as Dr. Mumford has cited are common to all of us. A satisfactory operation does not always mean a satisfied patient. This dissatisfaction on the part of the patient may be produced in many ways; it may be due to ignorance, brought about by the failure of surgeon and physician to sufficiently explain beforehand just what is to be obtained by the operation; it may be due to a chance word dropped by a nurse in the presence of a patient as once happened to me. A new nurse assisted me at an appendectomy, and later told the patient that she had never seen the operation performed just as I did. This aroused a great doubt in the mind of my patient as to her ultimate cure, and was not relieved by anything I could say or do, and not until some time after she left her bed, and then only after a painstaking effort on the part of her physician did she consent to believe all was well with her.

Patients are not to be considered as machines which act always in the same way.

Given a patient with a surgical condition it does not follow that a cure in its true sense will result when operation is furnished.

Diseases per se are the same, but act differently according

to their surroundings; that is, according to the patient. Therefore, in order to obtain a cure, not only must the disease be handled according to the rules for that special disease but also according to its locality, which is the patient.

A beautiful painting does not arouse the same ideas in all who gaze upon it, neither does a disease produce the same mental impression in all those suffering with it; and it is easy to see that a surgical procedure will produce varying impressions in different patients, though the conditions be the same and the procedures for its cure identical.

These patients may be likened to a rifle with unadjusted sights which regularly shoots too much to the left or to the right, too high or too low; the cartridges are the same, the target is the same, the man who uses it is the same, but he will miss the bull's-eye if he does not allow for the "personal error" of the rifle.

Since the majority of surgical cases are first seen by a physician, who later calls in a surgeon to aid in relieving the patient of the specific morbid condition, it is equally true that it is the combined duty of physician and surgeon to relieve the patient of aberrant mental conditions produced by the disease or the operation.

To lay down specific rules for combating these conditions would be worse than foolish. The cure is not brought about by what the physician says or does alone, nor by what the surgeon says or does alone, but a cure is the result of what they both say and do together. It is the result of their combined efforts on both the body and mind of the patient. This is best obtained by working and talking together. It is a work of explanation to the end that the patient be educated to a proper knowledge of his condition.

SOME OBSERVATIONS ON PELLAGRA IN THIS COUNTRY WITH SPECIAL REFERENCE TO PELLAGROUS INSANITY.

BY JOHN McCAMPBELL, M.D., MORGANTON, N. C.

Pellagrous insanity, as the name implies, is so closely associated with and dependent upon a general systemic disease that its consideration separate and apart would be difficult and hardly profitable, it being in reality only one of the late manifestations of the malady known as pellagra, which has been comprehensively defined by Van Harlingen as "a complex disease characterized by three classes of symptoms:

"1. A squamous erythema confined to those portions of the skin which are exposed to the action of heat and light.

"2. A chronic inflammatory condition of the digestive passages shown chiefly by obstinate diarrhœa.

"3. A more or less severe lesion of the nervous system leading at times to mental alienation and paralysis.

"These various symptoms are at first insignificant and in a certain way periodic. They begin or recur in spring and diminish or disappear in winter. Later they become persistent, more and more marked, and finally terminate fatally."

Pellagra has been known to exist in Italy, Spain and adjacent countries for more than a century and a half, and was scientifically investigated in Italy as far back as the year 1771, but until quite recently there has been very little said in this country on the subject. In fact, the existence of the disease has been denied by some of the most eminent medical writers of recent years, the subject being dismissed with brief mention and the statement that it is a disease confined to certain European countries. It is true that cases simulating pellagra were reported in the early sixties by Dr. Gray, of New York, and Dr. DeWolfe, of Nova Scotia, but the genuineness of these was questioned at the time and the disease

either disappeared or was overlooked (the former most likely) until attention was again called to it by the publication within the past year of the observations of Drs. Searcy, of Alabama; Babcock, of South Carolina; Wood, of this State, and possibly others, though some doubt apparently exists in the minds of some of these observers, as is evidenced by the fact that Dr. Babcock presents his able, and to my mind convincing paper, in the form of a query.

My own experience leads me to believe that we now have in this country, probably of recent development, a grave and usually fatal disease identical with the pellagra of Southern Europe, and which may, under favorable conditions, gain the proportions of an epidemic. During the past four years I have, from time to time, encountered mental cases presenting certain definite and rather uniform manifestations and associated with a peculiar skin eruption, which I was unable to fit into any recognized classification; yet I realized that I was dealing with a distinct entity, and it was not until the earlier of the last referred papers came into my hands that I was convinced that the disease in question was pellagra and the mental disturbance present constituted pellagrous insanity pure and simple. In support of this belief I wish to recount the chief etiologic and symptomatic features as observed in twelve of these cases, with special reference to their mental aspect, since all of them were so far advanced in the disease as to necessitate their commitment to a hospital for the insane.

The theory generally, if not universally, accepted is that pellagra is in some way associated with the ingestion of Indian corn which is diseased, harvested immature, or in some way damaged and consequently containing a toxic substance, the exact nature of which has never as yet been very clearly defined. Ballardini considers it a parasitic growth on mouldy or musty maize, while Lombroso suggests that it is due to the occurrence of a fatty oil and an extractive substance, the product of decomposition or bacterial action which are never

present in sound corn. At any rate, the disease is more in the nature of a ptomaine poisoning than a direct bacterial infection. This would naturally be supposed since most of the corn and corn preparations which are used as food have been cooked, and thereby subjected to a sterilizing temperature. It is of interest to note in this connection that I have recently had an opportunity to interview several native Italians of the peasant class, who had some knowledge of the disease, and they invariably assigned as the cause the eating of polenta three times a day; and they attached considerable importance to the fact that it was eaten three times a day. Polenta is nothing more than ordinary corn mush. I am unable to determine the exact character of diet previously used by any of my cases, but there is good reason to suppose that corn was extensively eaten, and it will be conceded that this prime etiologic factor was present.

Locality within the State seems to have no particular influence, as the twelve cases were distributed impartially over the territory extending from Robeson to Madison counties. All of these cases were women, which fact is at variance with the common teaching, since the two sexes are supposed to be equally susceptible. The negative bearing of this circumstance is eliminated by the fact that at the time these observations were made my service was confined to wards for women. In the epidemic occurring at Mt. Vernon, Alabama, and reported by Dr. Searcy, eighty out of eighty-eight affected were women. The average age was thirty-eight years. Nine out of the twelve cases ranged from thirty-eight to forty-five, which is of no special significance unless it be that the nervous instability consequent upon the approach of the climacteric in some way predisposes to the disease. Eight or two-thirds of the twelve cases showed first mental symptoms in either April, May or June, and two others in July and August. Allowing for a slight delay in the occurrence of mental disturbance in these two cases, we have ten out of twelve occurring in conformity to the usual seasonal incidence of the disease, it being understood that most cases

develop or recur in the spring and early summer months. There was a total absence of heredity in all but two cases, and in these it was remote—an insane uncle in one and an insane niece in another. Neither was there an instance of parental consanguinity.

Absence of these factors, which are important in the causation of most insanities, point to the exogenous character of the disease and renders it less likely that the ordinary insanities have been confounded with this series of cases. All, with two exceptions, were exceedingly poor and most of them bore evidences of having undergone extreme privation. These conditions, no doubt, contributed to the development of the disease both by the malnutrition consequent upon an insufficient diet, and also by the fact that poverty of that degree usually necessitates the use of corn to a greater extent than is customary with people in better circumstances.

All the cases under consideration having, before coming under observation, reached a condition of extreme mental alienation, it naturally follows that we are dealing with the latter stages of the disease, and data concerning the earlier symptoms are lacking. It appears from the histories given in the commitment papers that in a vast majority the mental symptoms were preceded by or associated with ill health, this period of ill health being in all probability nothing more than the lassitude, general debility and digestive disturbance common to the earlier stages of the disease. In fact, a run-down condition, debility, indigestion, general catarrhal condition of the intestinal tract and like troubles are specified in several of the cases.

The beginning of the psychic disturbance was usually marked by a period of anxiety and worry, undue importance was attached to trivial affairs and misfortunes were apprehended. Occasionally unusual religious interest was manifested. This was followed by disturbance of perception and the development of hallucinations, usually auditory, though occasionally visual as well. Judgment was profoundly dis-

turbed, giving rise to delusions, which were characteristic in that they were, with only one exception, depressive and painful in nature, though they lacked the self-accusatory quality of the usual delusions of simple melancholia, being rather of fear and suspicion, or more specifically, one thought that she was to be burnt up; another, that she was burning in torment and her child recently dead was also in hell. Still others thought that poison was put into their food or that they were to be hurt or injured in some way.

At this stage threats and attempts at suicide were rather frequent and occasionally homicidal tendencies were present. Two cases showed very decided emotional instability. As the disease progressed memory became grossly defective and orientation as to time, place and persons was imperfect. Incoherence of speech was common and was usually of the most desultory variety. Neither distractibility nor true flight of ideas were observed at any time. There were instances of muteism, the patient appearing dazed and failing to respond to questions and orders of the simplest kind, due probably to clouding of consciousness and a failure to comprehend.

Motor restlessness and insomnia were prominent with a disposition, even when extreme weakness was present, to get out of bed, tangling and scattering the bed-clothes about the room in a most aimless manner, and a kind of senseless resistance was made to efforts at examination. A total disregard for cleanliness soon appeared and all became extremely untidy in habits; this from mental habitude and indifference rather than viciousness. There was an early failure of appetite and frequently absolute refusal of food (often due to delusion), necessitating forced feeding with nasal tube.

These mental symptoms without remission steadily grew more and more pronounced until a condition of complete armentia ensued, and, coupled with the physical weakness present, was not unlike the so-called typhoid condition, and especially so, when the delirium assumed a muttering character. Coexistant with the mental condition described there

was invariably present an eczematous involvement of the skin, varying all the way from a thickened, roughened and pigmented condition, with a tendency to fissure, to a typical exfoliative dermatitis. These skin changes were distinctive in that they were limited to exposed areas, the backs of the hands escaping in no instance, and in this location the milder cases strongly suggested sunburn. The involved surfaces were uniform and ended abruptly, usually at or just above the wrists. The line of demarcation was very distinct and corresponded closely to the limit of protection afforded by the sleeve or arm covering. The eruption occasionally appeared on the face, especially at the angles of the mouth, and once upon the forehead, but was not observed on the feet.

There was a tendency toward pigmentation and scaliness over the bony prominences, even where protected by the clothing, and especially so where counter pressure was exerted. This was most marked at the point of elbows and front of knees, though in these places it was never as severe as where exposed to the action of the sun's rays.

The nervous disturbance consisted in exaggeration of the deep reflexes, coarse intention tremors, ataxic and choreic movements of the extremities, especially the arms; and later this incoordination frequently involved speech, rendering it halting, slurring and finally inarticulate.

The pupillary disturbances were slight, variable and inconsistent. As the end approached there was a general spastic condition of the muscles with marked retraction of the neck and head, and a mere tap at almost any point on the body would excite a slight tetanic convulsive movement. Diarrhœa was usually present, characterized by obstinacy and an exceedingly offensive and putrescent odor of the ejecta.

All twelve cases terminated fatally. The course of the disease was rather rapid. The average duration after the beginning of mental symptoms was three and one-half months. The average duration after admission to the hospital was forty-four days.

The foregoing mental symptom-complex, although somewhat contradictory, or at least inharmonious, might be to some extent associated with any of the toxic or exhaustion psychoses, since many of the symptoms mentioned are common to most of these conditions, without regard to the particular morbific influence in operation, and it was only by the somatic disturbance invariably present, chief among which were the skin lesions, that differentiation was possible.

I am aware that the number of cases studied is rather small and the records from which the histories are taken too incomplete to altogether justify a dogmatic statement, yet I believe that sufficient has been said to show the close similarity of these cases to the descriptions of pellagra given in the classic writings on the subject.

And I would say, further, that this paper is not presented with a view to adding anything to the literature of the subject, but rather in the hope that I may, in some measure, at least, aid in directing the attention of the profession generally to a danger which possibly threatens us, since an early recognition is all-important, for it is only by prophylactic measures that we can hope to accomplish anything.

To show that this danger is not altogether imaginary, I will say that out of twenty deaths occurring among women in the State Hospital at Morganton during the past year, five, or twenty-five per cent, granting the correctness of diagnosis, were attributable to this disease, a number in excess of those assignable to any other one cause, tuberculosis included.

PELLAGRA.

BY E. J. WOOD, M.D., WILMINGTON, N. C.

Pellagra is a disease supposed to be due to an intoxication derived from diseased maize and characterized by the triad of symptoms: symmetrical erythema, gastro-intestinal disturbances and varied nervous and mental manifestations.

Spain was the first country in which pellagra was recognized. This was in 1735, and the disease was regarded as a variety of leprosy. The disease later appeared in Galatia, and later in Castilia, Rome and Aragon. To-day it is very prevalent in Navarre and Galicia. The name *lepra asturiensis* was one of the many by which it was known. Next the disease was noted in the northern provinces of Italy. Trapalli, in Lombardy, gave the name *pellagra* (pelle and agra, rough skin).

At the present time pellagra is very prevalent in Roumania. In 1882 there were 4,500 cases; in 1888 there were 10,626 cases out of a population of 5,339,650; in 1894, 6,694 cases; in 1898, 19,796 cases; and a more recent estimate places the number above 50,000 cases, who were affected with the disease in some stage. It also occurs in the south of France. Since 1856 it has been present in Corfu. The Asturias are still the chief seat of the disease in Spain. One sporadic case is said to have occurred in England.

When the disease first appeared in Italy it was in the neighborhood of the Lago Maggiori. During the last century it extended into Emilia and Tuscany. In Central Italy it is little known, and in Southern Italy and Sicily is unknown.

Bouchard described the disease in Mexico. It has occurred also in Brazil, Argentine Republic and Uruguay. Many cases have been reported from Egypt and some from South Africa.

The disease has almost disappeared from France, but there are still small areas in the Pyreness and in Garonne.

Sporadically cases have been seen in the Tyrol, Servia, Bulgaria, Greece and Asia Minor.

Italy and Roumania are considered the disease centers. In Italy it is endemic. According to a reliable source there were 100,000 cases or ten per cent of the rural population affected with pellagra.

The disease was supposed not to occur in this country, and many of the best text-books fail to mention it. Probably the first article on the subject appeared in the *Journal of the American Medical Association* for July 6, 1907, by Dr. G. H. Searcy. The disease appeared, according to this report in 1901, in Tuscaloosa, Alabama, but at the time was not recognized. In 1906 there occurred in Mount Vernon, Alabama, 88 cases of acute pellagra with a mortality of 57 or 64 per cent.

In 1905 the disease was present, unrecognized, in Wilmington. Certainly as far back as 1900 there was a case in Jones County.

Dr. James McKee, Superintendent of the State Hospital for the Insane at Raleigh, has kindly furnished me with notes of three cases under his care and suggests the possibility of the disease having been present in the institution for a number of years.

Dr. R. H. Bellamy, of Wilmington, at the recent meeting of the American Medical Association reported ten cases.

Dr. J. C. Gilbert, of Hope Mills, in a letter to Dr. Bellamy reports seven cases under his care.

Certainly there have been thirty cases in North Carolina. It is probable, however, that the correct number will run into the hundreds. It is also probable that the disease is rapidly increasing. We have many reasons to believe that the disease has existed in North Carolina for some years, but that these cases were sporadic, otherwise the condition would long ago have been recognized. That there has been an increase from a few sporadic cases to a number which is daily in-

creasing, the question of the disease becoming endemic with us, must be seriously considered.

Pellagra seems to be generally distributed throughout the South. Merrill reports a case from Colorado, Texas, and Babcock report nine cases occurring in the Hospital for the Insane in Columbia, S. C.

Symptomatology.

Weeks and even months before the appearance of the erythema of pellagra there may be symptoms which, while usually very indefinite, would lead one in a pellagrous region to make the diagnosis provisionally of the disease. There is often progressive weakness, especially of the feet and legs, gastric disturbances and loss of appetite. Roussel regards the loss of appetite and gastric disturbance as complications, and dryness and burning of the mouth with a sensation of heat in the stomach which may develop into a true pyrrhosis as the first symptoms of the disease. Further, he considers voracious appetite, vomiting, cardialgia and diarrhœa of purely nervous origin. Besides these symptoms there are vagabond pains in the extremities and back, tinnitus, weakness of vision, general malaise, especially in the mornings. Sometimes pain in the joints. Headache, vertigo and melancholia follow.

In many respects these symptoms are common to the whole group of acute infectious diseases, but still, when headache, vertigo, sensations of weakness especially of the lower extremities are present, often accompanied by diarrhœa and occurring about the middle or end of winter, our suspicion at least should be aroused.

According to Theodori about four weeks after these prepellagrous symptoms occur the unmistakable signs of the disease appear. This period is often much longer, in some instances being as much as a year.

The first skin lesion almost always appears in the spring, and the parts affected are usually those parts exposed to the

sun's rays. Many of the best observers think that as an etiological factor the rays of the sun have little effect. Among these are no less authorities than Procopin and Tuczek, to whose work we are much indebted for our information. Many other writers think that the violet rays are certainly a predisposing cause of the skin lesion if nothing more. The last word on the subject has not been said. In our cases we are disposed to belittle the solar influence: (1) Because the disease appears with us so early that we can exclude any very intense action; (2) in some cases it appears over the sternum, in the vagina and in patients who have been in bed for days and weeks with a pellagrous lesion on the hands and face we see the extension to the feet, even though previous to their admission to the hospital they had not gone barefooted.

The skin lesion usually appears first on the back of the hands over the metacarpal region, either with a swelling and a red spot in the centre or else with a diffuse redness. Oftentimes blebs appear. These blebs contain clear, alkaline serum which is sterile. After the hands the face is usually more apt to be affected. Here the lesion begins symmetrically either at the outer canthi of the eyes or at the angles of the mouth. It is common to have it symmetrically situated on the forehead in two patches, which have a narrow vertical strip of healthy skin between. Beneath the lower lids and at the back of the neck are favorite places. In the latter situation the lesions extend anteriorly until they nearly meet in front, forming a collar which is higher behind. In our limited number of cases we have found the face and neck lesions much more commonly in females and especially children. The next spot selected is the tops of the feet. Our last case has the two varieties of lesions occurring simultaneously. Just below the external malcolus there is a bleb on both feet which began as two round, red spots about the size of a fifty-cent piece. In ten days a bleb appeared which, after drying up, left a raw surface. In the same case over the crest of the tibia extending downward over the metatarsal region to the

lower articulation of the toes is a diffuse redness much resembling a lymphangitis.

This lesion will probably go on to exfoliation without bleb formation. In some cases the lesion may appear over the sternum, and in two of our cases the labia pudendi were affected by the typical lesion. The disease has been known to make its first appearance on some covered portion of the body, but this is exceptional. In none of our cases did it appear there until long after its more usual appearance on the exposed parts. In the lesions with blebs there is left a raw surface which either forms an ulcer or is covered by crusts which often are quite thick. The crusts and the weeping ulcerated areas, together with the odor, make a loathsome patient. With the beginning of healing the skin of the face contracts so that in one case there was a marked ectrapion and also inability of the lips to cover the teeth. The photograph shows the condition well, but it became much worse as the disease progressed. Usually, especially in the dry cases, exfoliation begins after three or four weeks, and as the dead skin comes away a pigmented area is left. This pigment varies from a slight yellowish tinge to a dirty brown or even a chocolate color. The depth of color depends upon the duration of the disease, that is, on the number of the attacks. In addition to the pigmentation the skin is shining and atrophic. By fall the skin regains more or less of its normal tone, only to be ready for a next attack in the following spring. With each attack the skin becomes more atrophic and more pigmented.

Intestinal Tract.

With the appearance of the erythema, or soon after, the mouth becomes affected. The mucous membrane is red and swollen, the lips may be covered with blisters, and later they become cracked and seared. The tongue is intensely red and the papillæ enlarged with furrows between. The patient complains often of burning and salty taste in the mouth often with an increased flow of saliva.

Dr. McKee says that the mouth suggests to him stomatitis materna. Salivation is often intense, and in one of our cases we suspected ptyalism. After the skin lesion the mouth condition is the most constant, and in none of our cases was it absent. In some cases it subsides after the first few weeks, in others it persisted throughout.

In all of our cases the stomach was not affected. Pyrrhosis, eructations, vomiting, anorexia or bulimia, often with extreme thirst, are common symptoms. In some cases the gastric analysis shows an absence of hydro-chloric acid, while in others it is normal.

Much more commonly present is obstinate bloody diarrhœa, often of a dysenteric type usually attended with colic. This diarrhœa is considered by many to be a neurosis, but it is often difficult to believe judging from the character of the stools.

Nervous System.

Roussel considered the vertigo a very characteristic symptom and described it as being much like a gastric vertigo. Diplopia and amblyopia are common, but were absent in all our cases. The pupils react acutely to both light and accommodation, and the opthalmoscopic examination has revealed nothing to us. The patients usually complain of a sensation of heat or cold in various parts of the body. We have attempted to investigate the tacticle sense, the sense of heat, cold and pain, but our observations are inaccurate because of the mental state of our patients. The complaint of pain, especially in the shoulders and epigastrium, is quite common and noted by us.

Convulsions are quite common and often close the scene. In one of our earlier cases this was so. Tetany is reported by some. We have found a coarse tremor present in a number of our cases. In one just before death her whole body was in a constant tremor, but could not be accounted tetany.

The condition of the tendon reflexes is most variable. In many of our cases they remained normal. In a few they

were absent, though there were no other symptoms of locomotor ataxia. In one case where the reflex had been absent there was a return before death in a rather exaggerated form. In one case it was much exaggerated and ankle clonus was present. In one case it was present on one side and absent on the other. Usually in the beginning of the disease it is normal or decreased, but later, when the lesion in the cord has extended, it is apt to be exaggerated. Station is usually good. The gait becomes unsteady but not atoxic. A slight spasticity has been observed. Among the baso-motor and troptic disturbances is usually included the erythema itself. In addition we often find paleness of the skin, sensations of cold, "goose flesh" and muscle atrophy in the shoulder girdle muscles of the hand, throax and lower leg. This should not be confounded with emaciation, which is often extreme. The alterations in the tongue and the thickening of the nails may be included under this head.

In Europe "misery and poverty" are counted the chief predisposing causes of pellagra. Just those conditions occurring among the peasantry in Europe are almost unknown with us. Certainly the richest and the poorest buy the same grade of corn meal. The chief difference here, as we all know, is in the fact that the poorer classes have less variety and often the food is poorly prepared. We are disposed to think that pellagra with us is not so much a respecter of persons, affecting the well-conditioned as well as the victims of previous disease, and poor hygienic surroundings.

It has been shown, especially in Sandeith's Egyptian cases that the parasitic diseases seem to form a very definite predisposing cause. Especially has it been noted that anchylostoma is often present. One such case was noted by Harris in Georgia. Babes and Sion report the occurrence of malaria in eight of their twelve cases. We have had occasion to consider seriously this possible relationship. My first case, which was erroneously reported in the *Journal of the American Medical Association,* had a latent malaria and the unusual condition

of a mixed infection with tertian and quartan organisms. Much attention has been paid to the occurrence of alcohol and syphilis with pellagra. This is unimportant except in so far as these conditions lower the resistance.

The course of pellagra is very variable. In Italy it is no uncommon thing for the outbreak to occur each succeeding spring for twenty years. Each year the patient becomes more wrinkled, more atrophic and more melancholy until, finally, they die from some intercurrent disease, as broncho-pneumonia or of cachexia.

There recently came under our care a typical case of chronic pellagra which is worthy of note.

Mrs. W.; age 34 years; Jones County. Family history negative. Previous medical history negative save for malaria and typhoid. No history of miscarriages. In spring of 1906 she was affected with gastro-intestinal symptoms, one month after the appearance of which the erythema appeared on her hand and the lower third of her forearms. In the spring of 1907 the same condition recurred. In May, 1908, the condition made its third appearance, was diagnosed pellagra and reported to me by my colleague, Dr. Thomas M. Green. Her condition was as follows:

A poorly nourished woman, much older in appearance than the age given. Symmetrically situated on her forehead were two patches of desquamating erythema. These patches are about equal to the size of two silver dollars. The same lesion surrounded both eyes. On the upper lid the lesion was more recent, with the presence of crusts and a weeping surface beneath. This lesion extended into the anterior nares. On the skin below the eyes the lesion was older and there is a slight brownish pigmentation. On the backs of both hands from the finger nails to the middle of the forearms posteriorly is this same condition of the moist variety. The lesions were especially aggravated over the knuckles and tips of the ulna. The same condition was present on the anterior surface save for the palms, where there was simple redness

without exfoliation. Near the upper margins of the arm lesions was found considerable brownish pigmentation. On the back of the neck was a much older lesion, which had caused a tawny pigmentation. Posteriorly this lesion is about two inches in length, but as it extends anteriorly it becomes narrowed, almost meeting in front. The labia pudendi were affected with the moist lesion.

Heart and lungs were negative.

Spleen and liver negative to palpation and percussion.

Urine showed albumen and granular casts.

Blood showed a simple anæmia of moderate degree.

No leucocytosis. Differential leucocyte counted showed no abnormal variations. Blood cultures were taken.

The patient's mental condition became rapidly worse, she refused nourishment, and a restraining sheet had to be used. In her mania she would rub off the crusts from the arm lesions especially, and the picture that resulted was horrid, with the raw, bleeding surface and the bed clothing covered with blood and pus.

She died of exhaustion.

Our knowledge of chronic pellagra is limited, fully 75 to 80 per cent of our cases being acute. It seems remarkable that Lombroso should have had occasion to differentiate this acute or "typhoid" pellagra from typhoid fever. There is certainly no resemblance except possibly in some of the late nervous symptoms of both diseases.

Our acute cases ran a course from a few weeks to a few months.

As an example of this is the following:

V. S. (colored); 12 years; Wilmington. Referred by Dr. W. J. H. Bellamy.

Family and previous medical histories negative as far as we could secure them, except that at this time she has a sister aged 6 years recovering from the first attack of pellagra. This child is in my care, and is strong and robust.

In February she had various vague digestive symptoms

before she noticed at the outer canthi of the eyes a small red spot. This erythema increased in size rapidly, extending over the forehead. It next appeared beneath the angles of the jaw and extended around the neck, meeting behind. The gums were swollen and red and the whole mucous membrane of mouth inflamed. The eruption next appeared on the backs of the fingers and extended upward to the middle of the forearms. The face and both arms were covered, giving the appearance of a superficial burn. The contraction of the skin of the face has been described. From the beginning the bowels have been affected in the form of a persistent diarrhœa. The only gastric symptoms have been anorexia and nausea. With the aid of two doses of santonin during the past week she has expelled from the bowels forty-six round worms and vomited one. When first seen a week ago the feet and ankles were œdematous, but this has disappeared and the erythema has taken its place.

Knee jerks were absent, but have reappeared. Skin sensations normal. Pupillary reaction normal. She complains of cold sensations, weakness and pain in right shoulder. She is now beginning to be quite delirious at times and falls out of the bed repeatedly.

June 13. The appearance of the face is distressing. The skin lesion seems really to have extended to the eyes. The cornea is dry and there is a marked conjunctivitis. Mucopurulent material flows from each eye. Both lids are so contracted that the eyes have not been covered for over a week; this condition is certainly largely the cause of the terrible state of the eyes.

Belmondo and a number of other observers state that typhoid pellagra never occurs primarily, that it is always the exaggeration of a recurrence in chronic cases. We have seen five cases die in the first attack. The disease must be more malignant than in Southern Europe. It is difficult to explain why this should be, except that we know when a disease appears in a new country the death rate at first is always

higher. We have examples of that in some of the yellow fever outbreaks, and better still in the outbreak of measles in some of the Pacific islands, where the mortality was 90 per cent.

The diagnosis of pellagra after it is well established is quite easy and does not require yearly recurrences to establish it. In no disease is an early diagnosis more important than in this, as our only hope of effecting a cure is in removing the cause early in the disease.

Ergotism was the first thing thought of in our cases, but it was excluded because of an absence of the characteristic numbness, tingling, vascular stasis, and gangrene of the fingers or toes.

I have had to watch for several days simple sunburn suspiciously in some cases because there is nothing more like it. The erythema of pellagra is described as resembling sunburn almost exactly. Usually, however, the diarrhœa and stomatitis precede.

Pellagra sine pellagra calls for our special attention. Right now we have a number of cases under this suspicion, but we must agree with the authority who rather questions the possibility of such a diagnosis. That such cases have occurred there can be no question, as the best authorities so state it.

The treatment of pellagra so far is not promising. Practically all acute cases die regardless of treatment. In chronic cases that are not too far advanced the removal of all corn food with tonic treatment, together with improved hygiene, often brings about recovery with or without mental deterioration, depending upon the stage of the disease when arrested. Babcock is using successfully atoxyl hypodermically in doses of one to one and a half grains every four to seven days. In much larger doses in the acute affliction it has failed in my hands. Babcock is also using Soamin (Burroughs, Wellcome & Co.) in one grain doses three times a day. In Wilmington we have exhausted the pharmacopœia without seeing any benefit derived by the sufferers.

VACCINE OR TUBERCULIN THERAPY IN THE TREATMENT OF TUBERCULOSIS.

BY H. B. WEAVER, M.D., ASHEVILLE, N. C.

To the bacteriologist we owe much; for it was he who stood alone, single handed fighting an army of doubters, and laid a foundation upon which the pathologist was forced to build. From him we received our first knowledge of bacterial life, and its relations to infectious diseases. It was the immortal Virchow, assisted by Klebs, who first announced the new theory that all functions of the body are but manifestations of activity or dormancy of the cells of the organism.

They first demonstrated to the world in 1877 that the inoculations of animals with cultures from tuberculous products produced similar lesions to those following the direct infection of tuberculous tissues themselves. This work, persisted in by Klebs, led eventually to the discovery by Koch of the tubercle bacillus, the real cause of the disease, the essence of which constitutes the vaccine in tuberculin therapy.

Hammerschlag is credited with having first made investigations regarding the nature of extractives of the tubercle bacilli, but to Robert Koch is due the honor of discovery of the principles and preparation of an emulsion of the powdered dead bodies of the tubercle bacilli—old tuberculin, which has stood the test of time in its therapeutic application in the diagnosis and cure of tuberculosis.

This leads us to inquire into the principles which underlie the vaccine or tuberculin therapy of tuberculosis.

What is vaccine therapy?

It is the treatment of infectious diseases in general by the inoculation of the patient with the product of the dead bodies of the micro-organisms of the same species that has caused and is maintaining the morbid process in the organism.

And in particular as in tuberculosis, it is the injection of

the specific product of the tubercle bacilli—tuberculin—in a definite manner and proper does whereby we get active immunization and the disease is healed.

This method consists, essentially, in the exploitation and increased activity of the protective machinery whereby the antibacterial power of the blood is increased to such degree as to successfully protect the organism from further invasion of pathogenic organisms and the deleterious effects of their toxins.

Two elementary contents of the blood necessarily come into consideration as protective agents against the invading microorganisms: "The leucocytes constitute one of these, and the antibacterial substances in the blood constitute the other."

It is true that to Metchnichoff belongs the discovery of the phagocytic power of the blood, and Koch discovered the principles to a great degree of tuberculin therapy, but it was left to Almoth G. Wright to show to the world *how* and *why* phagocytosis is accomplished in bacterial diseases. This he has done in a most lucid manner in his exposition of the opsonic index, whereby the amount and power of opsonins in the blood fluid may be estimated.

What then is an opsonin?

It comes from the Greek word "Opsono;" "I convert into palatable pabulum," or "I prepare the banquet."

Opsonins are substances—antibodies—formed in the blood fluids which prepare and render mico-organisms susceptible of being ingested and digested by the leucocytes.

The technique by which the amount of opsonins present in the blood may be determined need not be repeated here, but suffice it to say that it is the chemical union between the opsonins contained in the blood plasma and the pathogenic organisms that renders the latter acceptable to the white blood-cells. Therefore the gauge to phagocytosis does not depend on the activity of the leucocytes but upon the quantity and increased power of opsonins in the blood fluid. Wright says: "Increased phagocytic response is associated with successful

immunization or cure, and this increased phagocytic response is dependent on an increase of the opsonic power of the blood fluids and not on the increased capacity for spontaneous phagocytosis on the part of white corpuscles."

Now, if these things are so, if the machinery of immunization is understood and correctly interpreted by Wright, there ought to be a better way of measuring the immunizing effects of vaccine than by the old method of test inoculation of animals.

Wright and Douglas have clearly demonstrated that by placing in a pipette an equal quantity of serum to be tested, of blood-cells and of bacillus emulsion, and incubating for twenty minutes the contents of the pipette, then straining and examining under the microscope the average number of bacilli taken up by the leucocytes may be accurately counted. This gives the "phagocytic index."

The opsonic index is obtained by comparing this phagocytic index with that of healthy subjects.

1. We learn from these experiments that the serum profoundly influences the phagocytosis; that the increased power of the serum depends upon the opsonins therein contained. In short, the whole experiment teaches that the changes which are associated with the acquirement of immunity are changes in the blood fluids and not in the white blood-cells.

2. We learn that the "phagocytic reaction of the leucocytes and the contents of the blood in antibacterial substances can be measured with a degree of accuracy sufficient for all practical purposes." And if by these methods it is possible to measure the changes by charts and curves showing the negative and positive phase in each, which are superinduced by bacterial inoculation, it must be possible by curves to gauge in a more accurate manner than by a test inoculation the immunizing effects of a vaccine, and what should be the doses in any given case.

We have not time to go into a detailed account of the curves of immunization, which are obtained by inoculation of tuberculin vaccine, and the laws which govern the output of the

opsonins, but we should learn in a general way that the opsonic index varies very little in a healthy man, from day to day, but in tuberculosis the index fluctuates considerably. That the depressions or "negative phase" is due to a natural inadequacy of the organism in her protective machinery of immunization or to the overwhelming doses of tuberculous matter by auto-inoculation. That the positive phases result from auto-inoculations or artificial inoculation just sufficient to act as a stimulus, and that the essence of the vaccine therapy consists in so timing and graduating a series of inoculations as to perpetuate the positive phase at high tide, and therefore maintain the antitoxic activity of the organism.

Up to the present we have been dealing only with the physiology of immunization showing how the opsonins are performed in the blood; that they are not bacteriloisins, agglutinins or antitoxins; but are the physiological products of the tissues of the body, and are in the highest degree a *specific* whose special function is to render all bacteria fit for ingestion and digestion by the leucocytes, whereby the immunizing response is increased.

If we successfully treat the bacterial diseases by this method something more is to be learned. We should know how the bacteria find lodgment and growth in the tissues. We should understand how bacteria or their product find their way from the focus of infection into the blood stream; how the organism reacts to auto-inoculation and how to bring the bacteriotropic substances and leucocytes into action upon bacteria, which are cultivating themselves in the body but outside of the blood stream.

We know, therefore, that the rational application of this treatment can be had only in strictly localized processes, where the focus of infection is cut off from the lymph and blood streams. This class comprises almost all chronic infection, including all localized tubercular process and early pulmonary tuberculosis. In this class the opsonic index is persistently low, owing to the absence of the immunizing stimuli. In the formation of tubercle there is lowered vitality in the

focus of infection caused by absorption of the bacteriotropic substances by the tubercle bacilli; and because there is a deficit of antibacterial substances in the focus is owing to the fact that their conveyance through the lymphatics is greatly hindered by the barriers thrown up and around the tubercle in the form of a fibrous capsule.

Next in order we must notice the general principles which should underlie all our therapeutic measures: (1) "We must provide for the conveyance of bacteriotropic substances into the focus of infection"; (2) "In case there is stagnant fluid in the focus of infection, which prevents the entrance of bacteriotropic substances from entering the infected area, we must draw off the fluid in the focus."

One way the antibacterial fluid can be drawn fresh from the blood stream through the lymphatics into the focus of infection is by the application of heat or by Bier's method of statis-hyperæmia, which is effected by backing up the blood in the veins which increases the hydraulic pressure in the capillaries. This is effected as we know by the application of elastic bandages to the parts in such a manner as to cause congestion in the focus of infection, thereby carrying more—an excess—of antibacterial substances to the bacteria, which by increased leucocytosis are destroyed and the disease is healed. This method controverts the old method of treatment of inflammatory processes in the limbs and joints by rest, ice and elevation. Willy Meyer, of Post Graduate, New York, in a recent article speaks in the highest praise of this method of treating tuberculous joints and limbs. He says: "Of course hyperæmia is not a panacea, but experience has shown that this conservative treatment is by far the best method of treatment at our disposal for the treatment of tuberculous joints and bones."

To corroborate Meyer and others let me quote from Bier's book, in which it is stated that in seventeen consecutive cases of tuberculosis of the wrist treated at his clinic fifteen, or 88 per cent, were cured of tuberculosis. Of the elbow, 72 per cent; and of the foot, 61 per cent resulted in a cure. The very

hyperæmia we have all along been combating with our elements of rest, ice and elevation, he now teaches as being a teliologic factor—a wise arrangement of nature—in its fight against an invading foe, which has not to be reduced but increased in order to check the infective process and its deleterious results. "He certainly has demonstrated beyond the shadow of a doubt that his method is far superior to those formerly in vogue."

In the second instance, where there is an accumulation of stagnant fluid in the focus of infection as in tubercular peritonitis, the indications are for operative interference, by which we achieve many times wonderful results; but it is not the surgeon's knife that does the good, but it is the access gained by the bacteriotropic substances to the infected bacteria which will inhibit their further growth and cause their destruction. In other words, we have an artificially induced auto-inoculation.

Now, in regard to inoculation of bacterial vaccine or tuberculin for tuberculosis:

If as it is admitted that the reason every case of tuberculosis is not cured is on account of a deficiency of antibacterial substances—of an opsonin—in the blood; can this be remedied, and how?

This was the great problem that concerned Professor Wright, and he has apparently solved it by the renascence of a once discredited method which, illumined by his own genius, bids fair to become one of the most valuable assets in medicine. And that method is nothing more nor less than Coke's method of treatment by tuberculin or by the watery extract of Von Ruck. Coke's method failed because the requisite knowledge did not exist for its intelligent administration. "The main thing, the dose prescribed, was enormously too large and given too frequently, and through the union of the opsonin with the tuberculin terribly reduced the patient's power of resistance to the infection within him."

Under Coke's treatment from five to ten milligrams were given; whereas, Wright administered as a dose only 1-1000

of a milligram. We knew nothing *then* of the opsonic index or negative or positive phase: that the giving of an injection during the negative phase would still increase further that negative phase and drive the resistance down to zero; but now, thanks to Wright, a new era has dawned in bacteriotherapeutics whereby it is made possible to administer tuberculin and other vaccines in an intelligent and safe manner, both in diagnosis and treatment.

Wright, in speaking of single species of micro-organism found in the body when giving his personal experience of vaccine therapy, goes on to say: "Typical examples of this type are found in cases where tubercle bacilli have effected lodgment in lymphatic glands. In this type of infection all but uniformly successful results have been achieved in my experience by vaccine therapy. * * * What applies to tuberculous infection of lymphatic glands applies also to tubercle infections of the kidneys and other urinary organs, and also to early cases of tubercle of the lungs."

The fundamental facts demonstrated by Wright and Douglas supply a firm basis for the extension of the therapeutic lines in a definite and scientific manner; whereas, before it had been entirely tentative and fraught with risks. By this treatment Wright seeks to obtain the maximum amount of protective substances from the minimum inoculations, and he found that doses held by Koch and his disciples to be moderate were more toxic than curative, and produced the negative phase. The positive phase, which lasts about two weeks, is strongest when produced by tuberculin injections in infinitesimally small doses without producing any constitutional disturbances—1-1000 to 1-6000 milligrams; but Koch taught that five milligrams were the proper dose—5,000 times as much!

Urwick, who so lucidly expounds Wright's theory sums up the whole question by saying: "As the attempt to free the organism from the bacteria by antiseptics is recognized to be hopeless, the only other chance we have of destroying them is

by the injection of vaccine which forms protective or, in the language of Ehrlick, "bacteriotropic substances."

In conclusion, I have refrained from entering into detailed statistics but have confined myself to the discussion of the main principles of vaccine therapy, hoping that by any means we may here and there induce a scientific worker to embark on this task of mastering this somewhat difficult technique which shall vindicate the efficacy of vaccine therapy.

Although this is a new and practically untried method with the general practitioner, yet the opsonic theory has demonstrated that tuberculin as a therapeutic remedy in tuberculosis has passed beyond the experimental state, and rests on the firm basis of clinical as well as therapeutical facts. In regard to this treatment Trudeau lately states that in tuberculosis the more chronic the type of the disease the better adapted to tuberculin treatment the case seemed to him, and that in all cases of the common type, whether incipient or of long standing and advanced, provided the nourishment was good, will derive more or less benefit from tuberculin inoculation. This utterance, coming from such high authority as Trudeau, who is so conservative and not, until lately, an enthusiastic advocate for this treatment, speaks volumes for tuberculin therapy.

For eight years I have been treating tuberculosis more or less with the culture products of the tubercule bacillus, either in the form of old tuberculin or of watery extract. The results in incipient and moderately advanced cases have been eminently satisfactory. Even in advanced cases, with cavernous softening where the bacilli were found in the sputum. if nutrition were good and no complications the treatment is beneficial and partial arrest of the activity of the infection. which is a decided advantage to the dietetic and open-air treatment.

It is seen, therefore, on every hand that the intelligent and educated part of the profession in regard to this "opsonic philosophy" is one of waiting, anxiety and extreme respect.

SOME OF THE ESSENTIALS IN THE TREATMENT OF MODERATELY ADVANCED TUBERCULOSIS.

BY J. E. BROOKS, M.D., GREENSBORO, N. C.

The title of this paper printed in the program is misleading when it restricts the definition to incipient tuberculosis. Incipient tuberculosis is difficult to detect, and is generally diagnosed as something else. For this reason I wish to change the title to read, "Some of the Essentials in the Treatment of Moderately Advanced Tuberculosis." In this stage there may be no pronounced impairment of function, local or constitutional. Consolidation is not marked in extent, and there may be no tissue destruction. The patient is at his work and consults a physician because, in a general way, he is not feeling well.

TREATMENT.

To be successful in the treatment the doctor must get entire control of the patient and be able to direct his daily life. It may not require a great while to build up and restore the constitution to its original healthy appearance, but it may require months and years to cure or arrest a pulmonary lesion; therefore it is necessary at the very outset to put the patient in the way of a life that he can and will live until his cure is complete. Many patients fall by the wayside simply because they are permitted to believe themselves cured as soon as their weight and strength have returned. All tuberculous patients when cured, if cured, are cured conditionally. This should be drilled into them till the thought is ever present with them. The success of the best treatment depends upon its being kept up as long as the patient is in the flesh. There is no longer debate about the ability of the consumptive to get well, and yet no patient, perhaps, gets well and stays well not conditioned upon good behavior. The wonderful success of the outdoor treatment of this disease leads us to believe

that open-air life, with proper food and proper exercise, will result in the cure of almost all moderately advanced cases; that in the future, with properly constructed dwellings, hygienic-dietetic living will eliminate the great white plague from among men.

EXERCISE.

When the temperature is above normal exercise should be prohibited. It is at this period that destructive tissue change is greatest. Exercise now, even the afternoon buggy ride into the country to get fresh air, causes rapid rise of temperature increased heart-beat, loss of digestion with failure of appetite and exhaustion. This is the time of all times to keep the patient in bed and inhibit all effort. When there is no elevation of temperature moderate and well-timed exercise must be encouraged, but never to the point of fatigue. Probably more patients are killed by misdirected exercise than by any other manner of mistreatment. Exercise should increase with a return to health.

THE SLEEPING CHAMBER.

The bed should be on the piazza with storm curtains to protect during the storm, but rolled up at all other times. Whenever it is necessary to keep the patient in bed, let it be in the open air. Keep him warm with light woolen blankets. The open air causes sleep that is more refreshing, increases appetite and digestion, quiets the nervous system, lessens cough and gets the patient out of the way of taking cold.

DIET.

The consumptive must eat, and this must be taught as an essential to recovery. A good stomach, good food, good digestion and a good heart almost insure a successful termination. The best diet for a consumptive is the one that causes a regain of lost weight and gives the most strength to the body. Solid food is better than liquid food. I shall not attempt a bill of fare, but will stop at naming most of the essentials. Pure beefsteak, plenty of pure sweet milk, roast beef, chicken,

turkey, fresh eggs, raw or cooked; butter, good bread, fresh vegetables and fruits. These when taken in sufficient quantity and well digested are in the main sufficient.

BATH.

A sanitary bath is necessary at least twice a week.

DRUGS.

I do not deny that drugs have a place in the treatment of tuberculosis, but I do assert that no known drug affects the course of the disease. Drugs that aid in the physiological action of the organs of the body help in so far as they are successful in that direction, but no further.

THE DIAGNOSIS OF ACUTE MILIARY TUBERCULOSIS.

BY SILVIO VON RUCK, M.D., ASHEVILLE, N. C.

Acute miliary tuberculosis is a disease so varied in its clinical manifestations, even independently of the distribution of tubercle in the different organs, and in individual cases so closely simulates other affections, that its diagnosis is often attended by no little difficulty.

Especially is this true if the case has not been observed from the beginning and when a reliable history is not available.

When the question of differentiation arises the history is often of great aid, and a careful physical examination may assist materially in the individual case, if the presence of an old tuberculous focus be thereby revealed. In tuberculous or so-called scrofulous persons, and in those who give a history of previous tuberculous affections of internal organs, we should not fail to inquire regarding the possible relation of traumatic influences. Again the appearance of suspicious symptoms in the course of several weeks after surgical operations upon tuberculous bones and joints, lymph glands and other parts is suggestive of generalization of the tuberculous infection. In instances with a meningeal onset in young children the coexistence of a chronic otitis or mastoid disease may throw light on the cause of the symptoms.

In every case it should be borne in mind that we are dealing with a secondary process which has its origin from a primary focus somewhere in the body.

Although such etiological inquiries are important and may assist greatly in making a correct diagnosis, especially in instances in which tuberculosis is found, it is nevertheless essential to avoid hasty conclusions, and this is particularly true when the symptoms are atypical. For example, in young children, though they have a tuberculous family history or

perhaps glandular tuberculosis, we may actually be confronted with a broncho-pneumonia that has given rise to convulsions, and to the undue rapidity of the respiration and the pulse, which may reach a degree in generalized bronchitis that equals or exceeds the frequency commonly observed in acute miliary tuberculosis.

Thus the history of or presence of tuberculosis is but a link, although an important one in the chain of circumstantial evidence upon which we may base our final opinion, and this is true of all symptoms, every one of which may have another explanation when considered independently of the rest.

The respiratory insufficiency is one of the most constant, and in the absence of physical signs which could explain it, is one of the characteristics of the pulmonary form of the disease. When this has been preceded with the usual onset of general malaise, loss of appetite, and the patient has at first slight and then increasing dry cough, when we can exclude a local lung affection or a pleural effusion, when there is no evidence of a pericarditis or endocarditis, and the pulse is weak and unduly increased in frequency, with or without the irregular fever, the evidence becomes strong in favor of miliary tuberculosis of the lung, and more so still if we have at the same time support from an etiological point of view.

In such cases one will rarely err in the diagnosis of miliary tuberculosis of the lungs, if the symptoms increase in intensity and there is also rapid loss of weight. The latter is a prominent feature in almost every case of acute miliary tuberculosis, and may be seen in instances in which the fever is of a mild type and when a fair amount of nourishment is taken by the patient. The diagnosis would still be supportable in instances in which signs indicative of consolidation appear in the lung in the course of the disease, and the sputum becomes streaked with blood or actually becomes rusty for a time; nor would intercurrent pleural pain or signs of an effusion require its reconsideration. The later advent of more marked dyspnœa with cyanosis still further strengthens the evidence and

the diagnosis is eventually established, even though none of the symptoms are pathognomonic and etiological support is lacking.

The physical examination of the chest shows, as a rule, nothing characteristic, but can still aid us in certain cases. The examiner may be confused in instances in which the affection develops in the course of measles, whooping-cough or phthisis when catarrhal affections belonging to the preexisting pulmonary disease are present; the more so if he has not himself been familiar with the local auscultatory phenomena prior to the advent of symptoms indicative of a generalization. In such cases the results of the physical examinations of the chest are not available for diagnostic consideration, except as a basis for estimating in how far they may be accountable for the cough and dyspnœa and the general condition of the patient.

On the other hand, records of or reliable information of the recent chest examinations are often of great value, in cases where the former examinations have shown the disease limited to certain areas, while other portions of the lungs were free from catarrhal signs. When in such cases no change is apparent or the catarrh appears to have become generalized, and especially when this is indicated by a sense of stickiness, crepitant and subcrepitant rales, suggestive of bronchiolitis, the result of the chest examinations may give important support to the diagnosis.

Early pleural symptoms, especially pain, are often mentioned in the description of cases. Juergenson[1] described a peculiar rubbing or a soft friction sound, without local pain, which he noted in acute miliary tuberculosis, both on auscultation and by palpation; this he attributed to the presence of miliary tubercle in the pleura and which he and Litten confirmed by finding corresponding tubercle at autopsy. Similar observations have since been made by Burkhart,[2] Hager,[3] Riesman[4] and others who have noted this peculiar rubbing in exceptional cases.

In the pulmonary form the early negative findings, or the development of a diffused catarrh, the dyspnœa and increased pulse rate are the chief features and may continue to be so until the end unless meningitis develops in the further course. The fever attracts often but little attention, although it is rarely entirely absent. Careful observations should always be made and the temperature should be measured in the rectum, the dyspnœa and mouth-breathing preventing the usual approximation to correctness of the mouth temperature. Frequently we find that the fever which before has been absent or intermittent has assumed an irregular, remittent type, and that the normal is not reached at any time during the twenty-four hours, and occasionally an inverted type of the fever curve may occur. The latter is, however, also observed in other diseases, and is perhaps as frequent in acute pneumonic phthisis as it is in acute miliary tuberculosis. When the earlier course leaves us in doubt the subsequently increased signs of pulmonary obstruction and of prostration, and the occurrence of delirium, the pallor, the continued emaciation and, as already stated, the absence of physical signs to account for the dyspnœa aid in excluding other causes.

In differential diagnosis of the pulmonary form from other affections of the lungs we have to consider more particularly pneumonia and bronchitis.

Broncho-pneumonia and acute capillary bronchitis, especially in young children, can cause great resemblance. Even the prodromal stage may correspond in cough, slight fever, loss of appetite, or the onset may be sudden in both affections with convulsions. Henoch[5] reported several cases of pneumonia of the upper lobes of children in which the symptoms were suggestive of meningitis.

The respiration and the pulse can have an equal frequency, and the fever may be equally high. The demonstration of consolidation in the lung, and especially the presence of bronchial respiration, would be suggestive of pneumonia. If the case has been seen from the beginning we have been able to

observe the dry stage of the catarrh to be followed by moist rales, and have been able further to note its progressive extension from larger to smaller bronchi; this would likewise speak in favor of pneumonia. A diffuse capillary bronchitis, however, is in itself characteristic of miliary tuberculosis of the lungs, and unless we have the aid of other symptoms, especially on the part of the nervous system, the diagnosis may remain in doubt, or be shown in error at autopsy in cases that are rapidly fatal. Such difficulties are not frequently encountered; the onset of miliary tuberculosis is, as a rule, slower, and the physician is liable to see the case before the pulmonary symptoms are developed to a degree that exudative inflammations, in connection with dense deposits of miliary tubercle, can resemble a pneumonic consolidation of the upper lobes. Moreover such a complication in acute miliary tuberculosis is in itself very rare. The bronchiolitis caused by miliary tubercle in the lung is, as a rule, preceded by increased frequency of the respiration and by dyspnœa, and in the earlier period the chest examination is either negative or the inspiratory murmur in the upper lobes is markedly feeble as compared with that of the lower, and when catarrhal signs appear they develop in a reversed order, originating and extending from the smaller to the larger bronchi. We are therefore liable to hear first but few and later more crepitant or subcrepitant rales in portions of the lung that are resonant or hyper-resonant on percussion. In contrast with ordinary bronchiolitis at this time the lower posterior portions are often less involved than the upper, and there is no evidence of downward extension of the catarrhal process unless by mere coincidence, which may have been in a case observed by West[6] of a boy nine months old who was seen two weeks after contracting a cold and in which he diagnosed catarrhal bronchitis. The child died six days later of dyspnœa and the autopsy showed miliary tuberculosis of the lungs.

In adults acute croupous pneumonia is not liable to be mistaken for acute miliary tuberculosis of the lung, although

when in the course of the latter typical rusty sputa appear one would naturally think of the former. In such rare cases exudative pneumonic foci are probably associated, but when situated in the upper lobes they are suggestive of tuberculosis rather than of ordinary pneumonia. The abrupt onset of croupous pneumonia often with a chill, the regular fever and the marked physical signs in the lower lobes, as well as the general course and the appearance of the patient, differ enough to prevent error.

Pneumonia and bronchitis in adults are more liable to lead to diagnostic difficulty when occurring in aged persons, and especially in persons who are otherwise decrepit. Very often such affections begin insidiously and there is a gradual development of dyspnœa, cyanosis and irregular fever, with local signs of a diffused bronchitis; the illness is attended with much prostration and general exhaustion, and leads to death more or less rapidly. In such cases a generalized miliary tuberculosis, which has followed a chronic or subacute type, may be found unexpectedly at the autopsy.

A pleurisy with effusion could be thought of in cases in which the miliary process of the pleura causes marked exudation, and when the patient is first seen in this stage. It could, however, be in rare instances only that a careful inquiry and examination of a patient who suffers from acute miliary tuberculosis would not exclude ordinary pleurisy as the cause of all that can be found and observed in such cases.

Embolism of the pulmonary artery, when of small size and involving numerous branches successively, or when in a larger branch the obstruction develops gradually, may give rise to symptoms which can correspond more or less with those caused by miliary tuberculosis of the lungs, and death may occur in the course of several days or weeks, with signs of respiratory and circulatory insufficiency. Nevertheless the clinical picture differs and, even when such changes occur gradually, the patient has experienced a more abrupt change in respiration. At the same time his attention has been at-

tracted to the disturbed heart action which occurs simultaneously and which continues forcibly, often with precordial distress, while the small irregular pulse in connection points to obstruction in the pulmonary circulation as the cause of the dyspnœa and cyanosis. If the embolism is not of septic origin there is no fever, and although the patient does not think of the relation the physician would necessarily inquire and look for phlebitis or appreciate the probable relation of a septic affection, or of crushing injury to bone, etc., in the course of which the accident has occurred.

In the typhoidal form the difficulties in diagnosis, in so far as we seek to establish it upon symptoms, are liable to be greater than they are in cases in which pulmonary or meningeal symptoms are prominent. In many cases the coexisting symptoms of respiratory and circulatory insufficiency are important aids in differentiation from typhoid fever, and the temperature curve and rapid emaciation are likewise liable to direct the attention to the true nature of the disease.

However the resemblance in some cases which have been reported has been most complete. Senator, among others, has recorded such cases in 1881, in one of which the autopsy showed acute, miliary tuberculosis, although the type of fever, the presence of splenic enlargement, roseola, distended abdomen, dicrotic pulse, difficult hearing, epistaxis, singultus, and eventually the occurrence of purulent parotitis all appeared to speak for typhoid fever. But such cases are exceptional and ordinarily the two diseases present striking differences which can not escape the observation of the attending physician; and even in the more irregular types a careful study of the fever, pulse and respiration will in most instances enable him to arrive at a correct decision.

In acute tuberculosis the fever may be continuous with scarcely any morning remissions. It is then more continuous than typhoid and the typical typhoid curve is missing. In other cases it is intermittent, the remissions are irregular, or it may be of inversed type, as has already been mentioned.

The pulse, as a rule, exceeds in frequency that which would be in harmony with the existing fever, a fact which has been pointed out by all observers. In the fully developed disease 120-130 pulsations to the minute are not uncommon, and with increasing pulmonary obstruction the rate may be increased to 150 or more, even when the fever is comparatively low.

Increased frequency of respiration is noted at times quite early, but it usually belongs to that period in which tubercles have formed in the lungs. As the disease progresses the frequency naturally increases, the respirations become gradually deeper, and a true inspiratory dyspnœa results. Even in adults 40-60 respirations per minute are not unusual, and in children this may be much exceeded.

The marked enlargement of the spleen as it occurs in typhoid is rare in acute miliary tuberculosis, and a palpable spleen speaks strongly in favor of the presence of the former, especially in adults. A. Fraenkel,[7] however, found that in children the splenic enlargement may become equally marked. Wagner[8] and also Fraenkel[9] have called attention to the enlargement and pain on pressure of the liver in children when this organ is included in the miliary dissemination. Fraenkel has seen severe icterus, and in either children or adults he believes an enlarged liver speaks for tuberculosis rather than for typhoid.

When the correspondence of symptoms is complete the question of differential diagnosis does not arise, but in general practice where laboratory facilities are not available, such cases still continue to afford occasional surprises upon the autopsy table. When, however, such facilities are at hand, we now have additional aids in bacteriological examinations and serum reactions. Regarding the latter a characteristic positive Widal reaction on the one side or a marked Arloing Courmont reaction on the other is rarely misleading, but it must be remembered that tuberculous subjects often show a Widal reaction, which, though less marked than in typhoid fever, may cause confusion, and that the Arloing Courmont test may prove entirely negative in tuberculosis.

In all doubtful cases in which the question of typhoid fever centers into the differential diagnosis, bacteriological examinations of the blood, urine and fæces for the demonstration of Eberth's bacillus should be made.

From blood taken from roseola, Neufeld[10] was able to culture typhoid bacilli in 13 of 14 cases examined, generally before a positive Widal reaction could be obtained, and Curschmann[11] succeeded in the same way in 14 of 20 cases.

Besson,[12] on the other hand, failed in all but one case in which he found Eberth's bacillus on the ninth day. This author had likewise but negative results in examinations of blood from intestinal hemorrhage, epitaxis, and phlebitis, but more recent blood examinations have generally been more successful. Auerbach and Unger[13] succeeded in obtaining growth in 7 cases out of 10, by adding from 10 to 30 drops of the blood to 300 cubic centimeters of bouillon.

Conradi[14] added oxgall to the blood specimens taken from the finger tips or ear lobule to prevent coagulation, and to assure better growth he added pepton and glycerine. In this manner he obtained growth in 10 to 20 hours, and then plated on agar. In 28 cases examined he was able to show Eberth's bacilli in 22 and the paratyphoid form in 6 cases. In 8 cases he succeeded in the first week and in 5 other cases before the Widal reaction was positive, or before typhoid bacilli appeared in the fæces. Marchese[15] also obtained cultures in 16 of 20 cases which he examined. Veil[16] found that a positive result is common in the first week, while in the second week or later the bacilli can be found but rarely, and then only in very severe cases. Edel[17] found typhoid bacilli in the hemorrhagic sputum in a case of typhoid fever complicated by pneumonia.

In the urine the bacillus of typhoid fever has also been found with considerable frequency, although not as early as in the blood.

Bouchard[18] examined the urine bacteriologically in 65 cases, in 21 of which he found bacilli, which he considered identical

with those he found in the blood and presumably the organism of typhoid fever. In all his cases the bacilli were found only when albumen was also present. Karlinski[19] examined the urine during life in 38 and the bladder after death in 6 cases. Of the 44 cases thus examined he had a positive result in 21 instances, and in some cases as early as the third day. Neumann[20] found that the bacilli appear in the urine soon after the eruption of roseola, while Konjajeff[21] found them only in 3 of 20 cases in the third week or later.

Neufeld[22] found them in 3 of 12 cases, and Richardson[23] in 14 of 66 cases, but as a rule not until after the second week. Schichold[24] was able to demonstrate the presence of bacilli in one of his cases as early as the seventh day, and succeeded in 5 of 17 cases examined. This author believes that structural alterations in the kidney, either caused by the typhoid bacillus or preexisting, must be present to allow their passage, and that their appearance in the urine, and the time of their advent varies accordingly.

Wright and Semple[25] were able to demonstrate typhoid bacilli in the urine in 6 of 7 cases, Jacobi[26] in 7 of 30 cases, and in a series of 100 cases examined by Knox[27] the results were positive in 51 and the earliest observation was on the twelfth day.

In the fæces the typhoid bacillus has also been found with varying frequency. Positive results were reported by Pfeiffer,[28] Simonds[29] and by Seitz,[30] who found them in 6 out of 8 cases. Karlinski[31] in all of 9 cases, while Wight and Semple's[32] examinations were, as a rule, negative. Richardson[33] has contributed an excellent study to the subject and his paper contains valuable data as to the best methods to insure success. He found the bacillus in 10 of 13 cases, as early as the fifth, eleventh and twelfth day, while in the others they were first detected after the twentieth day. Higley,[34] who succeeded in 20 of 21 cases, found them on an average as early as the tenth day, while the Widal reaction appeared on an average on the eighteenth day, and in the urine their earliest

demonstration was on the nineteenth day. In 36 cases since examined by Krause and Sterz[35] were 19 positive results.

In cases in which acute miliary tuberculosis occurs with or soon after convalescence from typhoid fever, it may be mistaken as a relapse, especially so when the course of the primary disease has been typical and the diagnosis was well established. In such cases great difficulty may be encountered when the symptoms are atypical, and the bacteriological examinations just referred to avail nothing in the recognition of the complication.

Unless the examination of the blood should again show Eberth's bacillus or clear up the doubt by the presence of tubercle bacilli, we must depend upon the analysis of symptoms, and the demonstration of choroid tubercle when meningeal symptoms are present, which suggest a basilar localization.

The diagnosis of the meningeal form of acute miliary tuberculosis offers less difficulty when meningeal irritation and inflammation occur, after characteristic pulmonary, with or without typhoidal, symptoms have been observed in its earlier course. In such instances the occurrence of meningitis, although obscuring for the time the pulmonary affection, removes, as a rule, any previous doubt, and confirms the tuberculous origin of the preceding symptoms as well as of the meningitis.

Cases with meningeal symptoms have been observed in which the onset and course were not sufficiently distinctive to exclude tuberculous meningitis, and in which the differential diagnosis, especially from typhoid with complicating meningitis due to Eberth's bacillus, or from pneumonia with associated pneumo-coccus meningitis, has at first proved more or less perplexing. Our chief dependences for exact information then are the specific sera reactions, the examination of the fundus of the eye, examination of the spinal fluid, obtained by lumbar puncture, and the bacteriological examinations of the blood and secretions.

In the ophthalmoscopic examination of the fundus, choroidal tubercles have been found with various frequency, but, as a rule, at such a late period that the nature of the affection was established on clinical grounds long before. In rarer instances the discovery of choroidal tubercle has become an aid in diagnosis. B. Fraenkel[36] reported such a case in 1869, in a child, age six, in which he found choroid tubercle, although meningitis was absent; nor did it appear in the subsequent course.

In a second case he found them ten days prior to the onset of meningeal symptoms. Brueire[37] was able to make a differential diagnosis from typhoid fever and Loeb[38] succeeded in the same way by finding tubercle of the choroid.

While the ophthalmoscopic examination is but rarely of aid in the early period of the disease, and never in the initial stage, the presence of tubercle of the choroid supplies absolute evidence that more or less generalization of a tuberculous process has occurred, and like the demonstration of tubercle bacilli in the blood or the appearance of miliary tubercle upon visible mucous membranes in the course of the disease, it removes all previous doubt, in instances where the general symptoms justify the diagnosis upon clinical grounds only.

In cases in which meningeal symptoms occur early and predominate in the prodromal and subsequent periods, the slower onset and more protracted course speak for a tuberculous origin. Such cases differ then but little from tuberculous meningitis, without generalization, the consideration of which does not fall within the scope of this paper.

In cases of acute miliary tuberculosis, tubercle bacilli have been occasionally found in the blood.

Weichselbaum[39] was the first to find them in the heart clot of three cases which he examined, and at the same time he succeeded in demonstrating their regular presence in the miliary tubercle. Meissels[40] confirmed Weichselbaum's autopsy findings, and he further found tubercle bacilli in one of two cases examined during life. Lustig[41] also found tuber-

cle bacilli intra vitam in one case and in the heart clot after death in eight others.

Reutimeyer[42] demonstrated tubercle bacilli in the fluid withdrawn with a hypodermic syringe from the spleen 16 hours before death, and Sticker,[43] Doutrelepont[44] and Ulcacis[45] found typical bacilli in blood specimens taken from the finger tips.

The last named authors were able to demonstrate them at a time when the diagnosis between typhoid fever and acute miliary tuberculosis was in doubt. Tubercle bacilli have since been found in the blood by various others by direct examination of stained specimens taken during life, but this method frequently fails and the animal experiment is necessary for their demonstration.

Most authors have failed to find tubercle bacilli in the blood sufficiently early to render their demonstrations of value in differential diagnosis. Nevertheless, Wild[46] and Ribbert[47] think that tubercle bacilli are present in the blood more constantly than former examinations have indicated, and they even believe in their multiplication in the blood. The more recent observations of Jousset would in some respects confirm these views.

Jousset,[48] by his method,* found tubercle bacilli in the blood in almost half of the cases of acute and subacute phthisis

*Jousset's method, which is also applicable to pleural and peritoneal exudates is for blood as follows: From 30 to 50 cc. of blood are taken from a vein by means of a sterilized syringe, and diluted with 150 to 200 of sterilized water. After coagulation has occurred the clot is filtered out upon a boiled compress and washed with sterile distilled water to remove all serous fluid. It is then placed in a flask to which are added 10-30 of artificial gastric juice (1 to 2 g. pepsin, 10 g. each of glycerine and hydrochloric acid, 3 g. of sod. fluorid and 1000 g. distilled water). The flask is placed in the incubator at 38°C. or on the water bath at 50°C. for 2-3 hours, digestion being hastened by agitating every half hour.

The resulting liquid is centrifugalized and the sediment stained for the bacilli.

To fluids which do not coagulate spontaneously or in the examination of urine, he adds a small amount of blood plasma from the horse.

which he examined. He succeeded in demonstrating them with especial frequency in caseous pneumonia, and in two cases he was able to make the differential diagnosis of acute miliary tuberculosis from typhoid fever. The frequency of his observations has, however, not been confirmed by other authors, among them Bonardi,[49] who, nevertheless, considers the method of great, and even of as much value as the serum reactions of Arloing and Courmont, and the tubercle test in certain cases. Debove[50] also thinks favorably of the method.

In the urine of a case of acute miliary tuberculosis in which the diagnosis pointed to typhoid fever, Proebsting[51] found tubercle bacilli, and in the further course choroid tubercle was also demonstrated. The autopsy in this case showed caseous changes in the kidney, indicative of an older lesion. Kleczetow[52] diagnosed acute miliary tuberculosis in two cases by finding tubercle bacilli in the urine, and recommends its examination in doubtful cases.

Baumgarten[53] and others have obtained positive results from inoculations with urine, but for diagnostic purposes experimental tests with blood and urine are too slow.

What aid may be derived from the conjunctival administration of tuberculin as suggested by Calmette and from cutaneous administration, known as Pirquet's method, remains to be seen. Bandler and Kreibish[54] failed in obtaining a reaction by the cutaneous method in four cases of miliary tuberculosis of mucous membranes, all of which had high fever and were otherwise cachectic, which is in accordance with Pirquet's own observation that miliary and cachectic cases do not react.

Eyre, Wedd and Hertz[55] obtained a positive conjunctival reaction in a case of tuberculous meningitis, and failed in another in which the comatose stage had been reached 30 hours before death. On the other hand, Cohn[56] found that a reaction is frequently obtained in typhoid fever patients, especially in the stage of convalescence. Further observations are necessary to establish the reliability of either method, but

as they are unattended with danger and applicable in the presence of fever, there can be no objection to their trial in cases where the subcutaneous administration of tuberculin is contra-indicated.

The urine shows nothing characteristic. It is, as a rule, diminished in quantity, sometimes very scant, and Rosenstein[57] has noted anuria in children, probably depending upon implication of the kidneys in the miliary dissemination. Slighter degrees of albuminuria are often present, and Munro[58] noted albuminuria in 11 of 17 cases, which were confirmed by autopsy. Acute renal tuberculosis existed in over 70 per cent of these cases. In six cases without albuminuria the kidneys were thus affected in but three instances.

The presence of indican especially in children, to which Hochsinger called attention as of aid in differential diagnosis, and which Djouritsch[59] also thinks valuable in this respect, occurs in other gastro-intestinal affections. Monti[60] found it only in very severe cases, and never in the beginning, and other authors who investigated the subject in acute and chronic tuberculous affections of children, as, for instance, Noute[61] and Steffen,[62] attach no diagnostic import to its presence.

The diazo reaction, while not available for the differentiation of typhoid fever, may be of aid in the diagnosis of the pulmonary and the meningeal forms. Nissen[63] found the diazo reaction in 10 of 15 children suffering from acute miliary tuberculosis, it having preceded the onset of meningeal symptoms for a period of four to eight days in eight of his cases.

Kephallinos[64] recorded the diazo reaction in 22 of 46 children with generalized miliary tuberculosis and coexisting meningitis.

In certain cases in which acute miliary tuberculosis follows its course without distinctive symptoms, presenting the clinical picture of some other disease, a positive diazo reaction will be of diagnostic value; for example, in such cases as re-

ported by Strauss,[65] Rheinhold[66] and others, in which before death there were only symptoms of acute polyarthritic rheumatism, although the autopsy showed general acute miliary tuberculosis. Rheinhold's case of a young woman, aged 18, progressed under the symptoms of erythema nodosum with rheumatoid manifestations, until symptoms of meningitis developed unexpectedly.

Other unusual clinical symptoms suggestive of septic processes by the occurrence of well-marked chills at irregular periods with great variation in temperature, or periods of intermission will at times draw the physician's attention in an entirely different direction, as shown by the cases reported by Fischel[67] and by Spaeth,[68] in which acute miliary tuberculosis developed during the puerperium. Spaeth's case appears to have been complicated by a puerperal infection, but in the case of Fischel there was no such evidence, and it is of interest additionally, by an intermission of symptoms sufficient to warrant the patient's discharge from the hospital.

In the foregoing consideration of the diagnosis of acute miliary tuberculosis there will be found nothing new or original, but I have endeavored, in the light of present knowledge, to review the subject as practically as possible in the time allotted, and especially to emphasize the more important points which are of real value in the differential diagnosis from other affections.

Briefly these may be summarized as follows:

1. The rapid emaciation, which is a striking feature in almost every case, and which is out of all proportion to the degree of fever, the state of the digestive organs, and the amount of food taken.

2. The bronchiolitis of acute miliary tuberculosis of the lung is characteristic in that the catarrhal signs appear first in the smaller and then extend to the larger bronchi, instead of in the reverse order as in ordinary bronchitis. In further contrast to ordinary bronchiolitis the lower posterior portions of the lung in acute miliary tuberculosis are often less involved than the upper.

3. Cases in which typhoid fever is minutely simulated by acute miliary tuberculosis, or in which the two diseases coexist are rare, and a careful study of the pulse, temperature and respiration will usually lead to a correct differentiation.

4. Serum reactions are reliable when present in well-marked degree, but tuberculous patients may show a modified Widal reaction, and the Arloing Courmont reaction is not always present in tuberculosis.

5. The ophthalmic test as applied by Calmette and the cutaneous application of tuberculin according to the method of Pirquet, while not yet established as thoroughly reliable, are safe, and one or both should be employed in all doubtful cases, especially if the subcutaneous injection of tuberculin is contra-indicated.

6. Bacteriological examinations of the blood, fæces and secretions may be of great aid in doubtful cases.

7. The appearance of choroid tubercle, or miliary tubercle of visible mucous membranes in the course of the disease removes all doubt.

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USE AND ABUSE OF DRUGS IN TUBERCULOSIS.

BY WILLIAM M. JONES, M.D., HIGH POINT, N. C.

To what and where are we drifting in our therapeutics regarding tuberculosis, and particularly that form known as phthisis?

Since the beginning of medical history, tuberculosis has been attacked, from every known point, and by all kinds of men, with as many different varieties of treatment as was possible for the brain to conceive of. Why is it that we of to-day have not profited more by the success or failure of our predecessors? Is it because of the fact that we have lost sight of the minor considerations in our insane endeavor to obtain a specific? We know that this disease has been successfully treated by men of the past, and that our results of to-day are but a little more encouraging than those of an hundred years ago.

By an examination of the history of the past few years, we find that the favorite of to-day has invariably been the outcast of to-morrow. This has caused no small amount of distrust for the use of drugs, and we stand ready to discard them from our armamentum, and to rely entirely on climatic, dietetic and hygienic measures. That drugs are of value no one can deny, although there may be differences of opinion as to the position they occupy, when compared with other methods of treatment.

The narrow scope of this paper will not permit me to enter into any discussion other than the internal administration of drugs, and in this I shall not attempt to discuss their physiological action or to mention more than a few of the more frequently employed, and confining my remarks in the main to such data as I have gained from observation.

Post-mortem statistics present conclusive evidence of the curability of this disease, when we remember that there is at

least as great a per cent as 90 per cent to 98 per cent of all persons who reach the age of 35 years, who show healed tubercular lesions, we must infer that drugs have been instrumental to an extent in this restoration.

Caswell, in 1836, said: "Pathological anatomy has never afforded stronger evidence of the curability of a disease than in a case of phthisis."

Drugs used in tuberculosis are supposed to act in one of two ways: directly on the tubercle bacilli, causing their destruction or prohibiting their growth and proliferation; indirectly by the increase of body weight and consequent increase in strength and resistance of the patient. In regard to the destruction of the tubercle bacilli there is no drug or combination of such strength that will not at the same time destroy the surrounding tissues, though some may have the power to lessen their growth and proliferation.

Tuberculosis is seldom so pure and simple. By this I mean to convey the idea that tuberculosis per se is rarely to be found as the only pathological condition that is affecting the patient; even in early incipient cases there is often a mixed infection and slight leucocytosis with more or less anæmia.

When we use the term abused we do so with the intention of conveying the idea that it is contra-indicated, whether from a physiological standpoint or one of idiosyncracy, or on account of some complication that may be affecting the patient, and thereby contradicts its administration.

The first that we shall consider is cod liver oil. This is a fixed oil obtained from the fresh livers of gadus morrhea, or other forms of codfish. This drug, or food as it is sometimes called, has to the mind of the laity become almost synonymous with tuberculosis, and to such an extent that whenever a patient is taking cod liver oil the inference is that he has consumption. In the administration of this drug it will be found advisable to begin with a small dose and gradually increase, using a few drops of ether to assist in the

digestion, and a small amount of ol, eucalyptos may be added to disguise the taste. By this means patients will be enabled to consume larger amounts and for a longer time without the usual amount of digestive disturbances that so frequently accompany its administration. The most that can be said of it is that it is an easily assimilable fat, and as such causes an increase in the weight and strength of the patient, and thereby an increase in his resistance. We are aware of the fact that the market is simply deluged with patent and proprietary preparations purporting to contain from 40 to 50 per cent of oil, when in reality they seldom contain more than 8 to 10 per cent, and this not always cod liver oil, but some substitute. Many of these preparations contain alcohol, and are therefore stimulants and not nutrients. Whenever this drug can be used without derangement of the digestion or other inconvenience to the patient it is of advantage; on the other hand, when the opposite effects are produced, it is of very decided disadvantage, and its administration should be immediately discontinued.

The same may be said of the other oils as of cod liver oil, and cotton-seed oil is preferred by many on account of the fact that it may be administered for a longer time and in larger doses, without so much derangement of digestion and little inconvenience as regards taste, and on account of the fact that it may be administered during the hot months of the summer.

Creosote, like cod liver oil, has become so fixed in the minds of the public that they think that its only therapeutic use is in tuberculosis. The creosote that is usually found on the market is an impure phenol; and it is only the pure beechwood that should be used for internal administration. The employment of creosote in tuberculosis was based on the statement of Guttman, "that tubercle bacilli were destroyed by blood containing one of creosote to 2,000, and that one-half of that proportion would arrest their develpment." This was only theoretical, for we know that what good effects are

derived from creosote are due to the formation of soluble compounds between the remedy and the toxic albuminous by-products of the tubercle bacilli which are eliminated by the blood.

The carbonate of guiacol is preferred by some clinicians, as it is the principal ingredient and of more definite composition.

Creosote was first advanced as a remedy in tuberculosis by Richenbach in 1833, and revived by Gimbert and Bouchard in 1877; since which time it has been used by men of reputation and ability, who have reported so favorably and in so many instances that there is at least strong prima facie evidence in favor of creosote and its derivatives. But we must not lose sight of the fact that it is often the cause of digestive derangements, and whenever this be the case its use should be immediately discontinued. One specialist has said, as regards the digestive derangements: "In the majority of the cases sent to me the digestive troubles may be attributed to excessive doses of creosote which had been administered by the family physician.

It would be an act of presumptuousness for me to attempt to discuss the great disadvantage to which a physician is placed in his endeavor to treat a case in which the stomach is weak and nonretentive to most of his remedies. Nevertheless this is a state of affairs or condition that we are often compelled to face, and one that will tax our skill, patience and ingenuity to the utmost.

Ichthyol (ammonia ichthyol sulphate). This, though a comparatively new preparation, was first brought to the attention of the profession as a remedy for tuberculosis in 1894 by Cohn and Scarpa, since which time it has been extensively employed, and the results have exceeded the hopes and expectations of the most sanguine.

It retards the disintegration of albuminoid substances and favors their formation and assimilation, increases peristalsis and has a laxative action on the whole intestinal mucosa. It

is excreted by the fæces and urine, but not directly, as it is first absorbed and then excreted, this being verified by the fact that from seven to ten hours are consumed in its elimination. It causes an increase in body weight, lessens cough and alters expectoration from purulent to mucoid; stimulates the digestion, thereby causing an increase in the appetite, and lessens night-sweats. Though not very pleasant to the taste, it is seldom the cause of nausea. It may be administered in pill, capsule or emulsion, and should in all cases be well diluted with milk or water, preferably immediately after meals. Of all drugs used in tuberculosis I consider this far the superior, not alone from my own observation but from the reports of well-known physicians and those of reputable institutions. It has been said "that the only objection to its use was the cost."

A few words regarding the use and abuse of drugs when used for special symptoms or complications.

It is in the management of cough that drugs are more abused than in any other complication affecting a case of tuberculosis. The patient complains that he is annoyed to such an extent that he can not sleep on account of an harassing cough, and seeks relief from this distressing condition. In the majority of instances he is given some mixture containing opium, or some preparation of a sedative and hypnotic character and possibly containing a little potassi iodide, in a menstrum of syrup, that will mask the symptoms and aggravate the condition. The cough may have been due to some cardiac derangement, the terminal filaments of the vagus nerve may have been irritated, an elongated uvula, inflammation of the eustachian tube from middle-ear disease laryngitis, post-nasal polyp, etc. In the event that you are unable to find the direct exciting cause of the cough, and it is of such a character that its relief is imperative, a little heroin will in the majority of cases be all that is necessary.

Antipyretics have no place in the treatment of tuberculosis as they only mask a symptom and do not effect a cure,

with consequent depression of the heart and that of the general system. Rest absolute of mind and body will bring about all the reduction that is necessary, and in the event that it does not reduce it antipyretics are not called for.

Hemorrhage.—The drug most often used and one that some of the recent text-books recommend is ergot. Ergot is of value in hemorrhage of any organ with the exception of the lungs, and here it is as surely contra-indicated, and more so than any drug that I can at present call to mind. The reason is that ergot is a stimulant to the vaso-motor centre, causing a contraction of the small arteries and arterioles, and by this action lessening the escape of blood, but at the same time causing an increase in the arterial tension and raising the blood pressure. The lungs, being separate and distinct in their minute histological anatomy as to circulation, accounts for this contra-indication in the administration of ergot. The terminal branches of the pulmonary artery do not anastamose as do the terminal branches of other arteries, and the walls of the pulmonary vessels are much thinner and consequently weaker than others, and as a natural sequence, whenever the blood pressure of the entire anatomy is raised, these weaker vessels are the first to give way under the increase, and the condition is thereby aggravated.

Rest combined with small doses of atropine will generally stop the flow in a short time.

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OUTDOOR LIFE FOR THE PREVENTION AND CURE OF DISEASE.

BY PAUL PAQUIN, M.D., ASHEVILLE, N. C.

You mention outdoor life to the average patient and he or she begins at once to sniff fresh air and to have visions of trees with birds flying about, flowers of various hues and aroma, expanses of prairies, hills, mountains and valleys, streams, rivers and oceans, shooting, hunting, fishing, tenting, shacking and roughing it in general. Just about so with the average medical man, for few of the profession have had experience with the problems involved in this proposition, or have given any thought to them. In fact, all that the sentence "outdoor life" conveys to the vast majority of civilization is a vague idea of trying to return to the ways of nature for help when in physical distress by disease. That the work of civilizing humanity has wrought radical changes in the habits, requirements and resistance of human beings and brought them to habits of life so artificial and foreign to original natural practices as to create second natures, so to speak, scarcely ever enters the mind of anybody. Consequently the requisites for safe and profitable outdoor life need to be discussed and studied if we would apply it in the prevention and cure of disease; and, as a preamble, I do not hesitate to say that reckless and haphazard outdoor life is no more justifiable than reckness and haphazard drugging. Both have had in the past and have to-day graveyard consequences.

Outdoor life goes back to primitive ages for its inspirations and ideals. The student of nature has discovered that certain maladies, particularly tuberculosis, is a disease of civilization. He has established that the wild man in the woods and jungles is seldom tubercular in his natural home in the open, and becomes involved by contact with civilized humanity. And so the consumptives and their medical advisers prescribe

outdoor life, which is well. But pause and consider. Don't push a sick man, woman or child out of doors in ignorance of individual conditions, circumstances and susceptibilities. As a rule the majority are not ready to cope instantly with and be benefited by the influences of outdoor life in all its forces and moods.

Housing, clothing and inheritance have turned man from wild ruggedness into a hothouse plant not always to be exposed without prior preparation to certain atmospheric and climatic conditions, with impunity. You should not expect, for instance, that a man who comes to you as many do with an overcoat in the month of June, thick coat and vest underneath, a thick flannel shirt under these, one or two or three undershirts, then a chest protector as dense as cowhide, and finally, the skin bound down by sticking plasters—you need not expect, I say, that such a man, stewed in the sweat and filth of his own body, can be suddenly laid out in the open air night and day without some sort of dangerous reaction. The best plan to catch a cold and also for the pulmonary sufferer to develop a pulmonary congestion is to sweat and then be exposed to a sudden process of cooling. This is only one way, however, to cause damage by outdoor life. There are many others, and so we need to understand them in order that we may not cause more harm than good in forcing patients to live out constantly.

As fundamental forces for beneficial outdoor life we may point out, above all things, the persistent supply of oxygen with the persistent dissipation of carbonic acid gas without rebreathing it, as compared with the more or less impoverished oxygen supplied in a room, and the constant rebreathing of the carbonic acid gas emanating from the lungs; and then the breathing of air from the house dusts and the dangerous germs of carpets, crannies and darkness, for in the open air, in favorable localities at least, the germs that float about and which when inhaled might do harm if they had been protected within a building, are comparatively harmless after

having been subjected to the influences of sunlight, rains and other atmospheric conditions. These basic factors are the essentials for the prevention and cure of disease by outdoor life. They are immensely valuable contributions to complete nutrition, which is the very soul of health. Now, how are we to maintain safely their good influence about a person, brought more or less out of close communion with nature by ages of ancestral artificial existence and by individual artificialism and false methods of the present day civilization?

To begin with, we must educate each person, if found necessary, in a manner to restore as nearly as can be normal personal existence as to clothing and exposure to the various elements of the atmosphere. A person who overdresses and macerates his or her skin with perspiration must, first of all, be gradually relieved of the encumbrance and made to live and to remain dry and to become capable of resisting the coolness of the breezes at least, not to say anything about accidental drafts and winds which all humans at times must be prepared to meet. A person must also be taught that cold weather, rains, snows, etc., are not insalubrious—far less than heat perhaps—but that certain conditions affecting these or the persons subjected to them are damaging; for instance, high winds, storms, direct drafts, sand or dust blowing, etc., etc. Above all things, those persons who think that they protect themselves from cold by keeping wrapped up in shawls, coats, sweaters, blankets, etc., as suggested above, and who insist, either of themselves or through friends and relatives, in living day and night in heavy underwear in order to keep off colds, should be taught and made to realize that this sort of so-called protection is a trap to catch colds and congestions and all the attendant catarrhs, and that underwear is primarily to keep the skin and necessary clothing far enough apart to maintain a free ventilation all around the body.

On the other hand, the question of sleeping in or out of drafts, of being close to or far above ground, of getting wet

and chilled, or suddenly hot after being cold, of rising at night when sleeping out, are to be considered by doctors and patients, particularly those who preach tents and shacks without ever thinking of surroundings, arrangements and appointments thereof.

In lying down, night or day, one can not afford to be in a direct draft that strikes only a part of the body. Be it ever so slight, it chills that part more or less, and, except perhaps when the draft hits the face alone, I assure you that usually a cold results. A breeze or light draft that is *not seriously chilling* in its temperature, and which covers and surrounds all the body alike, is not likely to cause a cold or congestion. The whys and wherefores of these facts can not be discussed in this brief paper. Suffice it to assert them.

It is evident, then, that one who would live out night and day must be so situated as to be bathed constantly in fresh air with the minimum chances of being subjected to drafts. I need not say, of course, that equal protection against chilling winds and rains and snows must also obtain. How can these desired results be secured? Simply by good common sense selection of a locality to live in and proper arrangements to live out.

First.—Select a fairly high altitude as far from smoke and road dust as possible.

Second.—If you choose a shack or tent have its floor several feet above ground, and be *sure* that it is lavishly ventilated (without direct body drafts), for a shack or a tent of the usual kind is a fraud and a snare, and worse than an ordinary bedroom with open windows. For one thing, a canvas room is usually stuffy and hot, and then it is generally too close to the ground and absorbs earth moisture with rheumatic and congestive effects.

Third.—You might roost up a tree by arranging there some sort of hold-on-to-platform and overhead covering. This suggestion has been laughed at, but still it offers opportunities for profitable fresh air life undreamt of by the sick or the

profession. It has been tried, too, and found less wanting than most any other outing abode.

Fourth.—By far the most satisfactory arrangement is the specially devised outdoor living and sleeping rooms, called the "in and out sleeper," whereby one may lie day and night absolutely and completely in the open, surrounded by fresh air always, without any danger from drafts, rains, snows, winds, dusts, etc. This is the method presented last year to the section of hygiene of the American Medical Association. This system obtains to-day at the Asheville-Biltmore Sanitarium. No weather was ever found bad enough to do the least damage to guests in such quarters. Through the winter, in dry and wet weather, everybody slept out. A special draft system at the foot of the bed draws the air past the body without touching it, keeping fresh air through and through in constant circulation, and then a foul air flue system carries the foul air of the rooms to an exit on top of the roof of the building.

In conclusion let me suggest that, after all, outdoor life is merely an aid to suitable nutrition, which is a process that involves not only the use of food and water, but the fullest possible assimilation of all the elements necessary to maintain the equilibrium of physical and mental forces in man, which we call health.

IMPORTANCE OF EARLY DIAGNOSIS IN SUCCESSFUL TREATMENT OF TUBERCULAR AFFECTIONS.

BY DANIEL A. DEES, M.D., BAYBORO, N. C.

In presenting this paper on the importance of early diagnosis of tubercular affections I have nothing new to offer, but want to call your attention to something that is known by every well-informed physician, though grossly neglected by a great many. We have no disease at the present time that is of more importance or of more interest than that of tuberculosis, especially pulmonary tuberculosis, though what is said of this form might apply to all varieties.

A great deal is written concerning the prevention and cure of this terrible disease so mild and sneaking at the beginning, yet so disastrous in its results. Our text-books and journals are filled with literature on its prevention and treatment, and, strange to say, there are so many of our physicians who fail to diagnose it early, and often wait so late before detecting it that all hope of arresting or curing the disease is lost. This is not due to ignorance on the part of the practitioner of medicine, but is for the want of care and the lack of important symptoms of the disease when infection first takes place.

The majority of our tubercular patients have to remain at home for treatment, and must take their chances to live or die without a change of climate. A few there are who have the means to go to any place where possibly the climatic conditions might agree with their special case, but the former class has a magnificent chance to regain their health at their native homes provided an early diagnosis is made and proper instructions given them as to diet, etc. As it is a well-known fact that while certain climates help and are very beneficial, nevertheless a man can get well in any climate if he starts in time and takes the proper kind of treatment.

Some of our patients we send to different sections of the country and put them under the care of men who make a special business of treating this one disease, and the results in cases that are sent early are very gratifying indeed. But our mountain friends tell us that many cases go to them too late for successful treatment, either so far advanced that nothing for patient can be done, or that patient remains at a standstill for months and months before any improvement does take place. This should not be, and the responsibility for changing such conditions rests upon the medical profession.

At the present time our equipment is far superior for diagnosis of the disease early than it was years ago before the discovery of the bacillus tuberculosis. There are other means, but the microscope is the average man's early detective and it should be used more than it is. The time has passed when it is necessary for a cavity to be in the lung before a positive diagnosis of tuberculosis is made, and yet some patients get that far advanced before a positive diagnosis is made.

Many of us, especially those who practice in malarial districts, have had patients to come in office with history of slight chills, anorexia and general anæmic condition, and attribute it to malaria, give usual treatment and not see patient for weeks to find on next visit to office that patient has all the symptoms of tuberculosis. The same might be said of typhoid fever and some other diseases.

Unlike a great many other diseases tuberculosis requires an early diagnosis if we expect to get results by treatments that are so greatly desired. To accomplish this we have to rely chiefly upon microscopical examination of the sputum more than anything else. This is absolutely essential to make a real positive early diagnosis, and we can not lay too much stress on that one thing.

There is a great deal said concerning the prevention of this disease. To my mind the greatest factor in preventing it is to diagnose early the cases which we already have and thereby prevent one patient from inoculating a whole family or com-

munity. In an early diagnosis we give to the patient the best possible chance for getting well, because an early treatment usually gives very satisfactory results. The patient soon becomes educated, so to speak, as to their own protection and the protection of others with whom they come in contact. Early detection of the disease with immediate treatment promises the individual patient good results. It protects the immediate family by causing the proper hygienic measures to be inaugurated, and therefore it protects the community as a whole, hence lessens the prevalence of the disease.

To me there is no medical subject of more importance than tuberculosis, and when we recall in every community whole families who have died from this disease we realize there are causes, and one cause is the neglect of early diagnosis of the trouble and thereby protecting those who are well. As a profession it behooves us to educate the laymen as to its danger and at the same time be on the lookout for incipient tuberculosis and see if the mortality of this disease can not be lessened.

A REPORT OF CASES TREATED WITH ICHTHYOLATED EMULSION COMPOUND.

BY JOHN ROY WILLIAMS, M.D., GREENSBORO, N. C.

Ichthyol, as a valuable adjunct in the treatment of tuberculosis, has been recognized for over twenty years. It has not been used as largely however because of its disagreeable odor and taste. Heretofore it has been prescribed in aqueous solution, in capsules or as the gelatin-coated pill.

It is a recognized clinical fact that ichthyol improves the digestion and assimilation, with little or no irritation of the gastro-intestinal mucous membrane if carefully applied. It lessens tissue destruction, especially the albumins, as shown by diminished nitrogenous excretion; it increases the flesh and strength by increasing the appetite, digestion and assimilation, thereby lessening the outgo and increasing the income. It is eliminated chiefly by the kidneys in the form of sulphur compounds, acting as a diuretic. It constricts the capillaries, improving the general circulation. Tends to rapidly convert a purulent sputum into a mucoid sputum, making it more fluid and easily raised, improving the drainage from the diseased foci and lessening the absorption, which is the chief cause of rapid heart and fever. It often rapidly reestablishes the menstruation in tubercular anæmic women, and the night-sweats in most cases soon stop. It improves the nutrition of the heart through its constricting action on the coronary arterioles and indirectly, through its several physiological actions, lessens blood destruction and assists in building up the same.

[1]Potter says: "The particular value of ichthyol is due to its nonirritant quality and the large proportion of sulphur contained therein. It retards the disintegration of albumins and favors their formation and accumulation."

[2]Bartholow says: "It increases assimilation and hinders retrograde metamorphosis, whereby the nutrition is improved

and the body weight is brought up to the normal level. Has a decided antiseptic action and is fatal to pathogenic organisms. It increases the volume and force of the circulation. Has a remarkable power to check waste, the urinary solids and nitrogenous excretia being greatly diminished. Hence, under its administration, the body weight increases, the income is promoted and the outgo is lessened, and these important results are accomplished without in any way impairing digestion or irritating the gastro-intestinal mucous membrane."

[3]Cohn says: "It increases the strength of the organisms and places itself in a favorable position to carry on a successful warfare against the bacilli of tuberculosis. In advanced cases improvement often follows when cod-liver oil and creosote have failed."

[4]Branthomme says: "He considers the action of ichthyol similar to creosote, but without the disadvantages of the latter. It is less irritating to the stomach than creosote, diminishes expectoration, causes an increase in weight, improves the general condition of the patient, and restores menstruation in tubercular anæmic women."

[5]Combemale and Desoil report that "during fourteen months all tubercular patients at the Charite Hospital at Lille were treated with ichthyol. There was prompt improvement in the general health of the patients, as manifested by the disappearance of the night-sweats, gain in weight and strength, and a reappearance of the menses. The expectoration is almost invariably lessened in amount and made more fluid, so that coughing is easier."

[6]Stubbert reports that "of all drugs used in the Loomis Sanitarium at Liberty, N. Y., for phthisis, ichthyol had yielded the best results. Under its influence the sputum was more easily brought up, became less yellow and more of a mucoid appearance. There was amelioration of chills, sweats and fever."

[7]Williams says "he has used ichthyol in several hundred

cases of pulmonary tuberculosis with good results in a large majority of cases. He has found the appetite and digestive powers increased, the daily average of temperature lowered and the sweats in most cases to cease. The bacilli rapidly show degenerative changes, with a gradual disapparance of them from the sputum. The cough is modified, the expectoration becoming easier, the sputum becoming more fluid, losing its purulent character, and gradually decreasing in amount."

The odor and taste of ichthyol have for the past twenty years prevented many consumptives from having the advantages of this remedy. Prescribed in aqueous solution it is foul tasting and odorous, very often nauseating to a degree to produce vomiting. The very large dose, which sometimes becomes necessary to obtain its benefits, has added to these disagreeable features. Given in capsule the odor and taste have not always been eliminated; also some patients have found it very disagreeable or impossible to swallow the capsule, due however to a neurotic cause, yet nevertheless existent. It was also difficult to get the patients to take enough water with each dose to make a dilute solution in the stomach, so as to prevent irritation, with consequent eructation or "rifting." Since the gelatin-coated pill often passes out with the stool, being undissolved in the stomach or bowel, the therapeutic action of ichthyol in this form can not be depended upon.

For the past several months I have been using ichthyol in the form of ichthyolated emulsion comp. It contains ichthyol, grs. 10; apinol, min. 10; ol. sassafras, min. 5; ol. olivæ, ol. gossypii seminis, glycerinum and mucil; acaciæ, qs., oz. 1. The odor and taste of the ichthyol are disguised. The apinol incorporated, which has all of the physiological actions of creosote with much less tendency to irritation, enhances the action of the ichthyol and eliminates the necessity of such large doses.

I find that this emulsion gives all the physiological effects

of ichthyol and creosote. That it is well borne by the stomach and bowel, has a tendency to overcome constipation, is almost a specific for indicanuria. I give it in a glass of cold milk six times daily, beginning with a teaspoonful at a dose, slowly increasing until the patient is taking a tablespoonful at each dose.

I have seven cases which I have treated with this emulsion I wish to report in a general way. Four of them were first-stage cases, all having slight fever and accelerated pulse. Three of these cases were complicated with a tendency to constipation. The average length of time treated was nine weeks, and the average gain in flesh was nineteen pounds. The highest gain was twenty-six pounds, the lowest was twelve pounds. All were having a normal pulse and temperature, and the cough and expectoration had disappeared at the expiration of treatment. There seemed to be an arrest or cure of the disease in each instance.

There was one second-stage case; a rather large woman, weighing 144 pounds when beginning treatment. Her temperature was 101.5; pulse 114. After eleven weeks treatment she had gained twenty-three pounds, the temperature and pulse being normal, and the cough and expectoration had almost entirely ceased. She stopped treatment and has been lost sight of. She gave promise of making a complete arrest or cure of the disease.

The remaining two cases were third-stage cases, one complicated with tubercular laryngitis the other with tubercular enteritis. Both had both upper lobes involved, and were having high temperature and rapid pulse. The case complicated with tubercular laryngitis was treated for fourteen weeks with considerable improvement in the lung condition, no change in the larynx, with prompt reduction in temperature and slower heart action, gained much in strength and added eight pounds in weight. He stopped treatment, went home, and has since grown worse. The other third-stage case, complicated with tubercular enteritis, made a far greater improve-

ment. The bowel condition was apparently arrested by the use of magnesium sulphate in five grain doses every two hours for three weeks. The lung condition greatly cleared, becoming quiescent, and the patient gained twenty-eight pounds in seventeen weeks. Her temperature and pulse reached the normal. She went home, from where she reports she is doing as well as when she left my care.

I employed in all these cases the usual hygienic and dietetic treatment, and with the two third-stage cases and one of the first-stage cases I employed tuberculin. While I have used ichthyol in capsules in my practice in a large number of cases the results I have obtained with ichthyol in the form of an emulsion have been far superior. While ichthyolated emulsion compound has not produced these good results unaided, yet I feel and believe that it has been a most valuable adjunct.

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THE TURN OF THE TIDE OF TUBERCULOSIS MORTALITY.

BY MARTIN L. STEVENS, M.D., ASHEVILLE, N. C

Tuberculosis is still the most formidable disease, notwithstanding the fact that it is a preventable one. The knowledge of the means of its prevention is only recently being disseminated.

Never in the history of medicine have so many scientific men been devoting their best energies to the prevention of any disease, and never have governments and private individuals alike been so united in the determination to stamp out any malady.

Already fruits are being borne. In the last decade the United States and all the European countries except one show a lower mortality from it than in the previous ten years. The tide of mortality has already begun to ebb, and we can now feel the positive assurance of the continued lowering of this mortality from year to year.

The factors most potent for good in this cause are:

1. The educational crusades now being carried on by the International and National Associations for the prevention of tuberculosis through the medical journals for the physicians, through the magazines for the literary public, through the newspapers for the business people, and by public lectures, posters and tracts.

2. The sanatoriums, the patients of which become educators in their home communities.

3. The State and local Associations like our own which are supplementing the work of the larger bodies.

4. The tuberculosis exhibits which in the Southern States alone have been visited by 150,000 people since the Jamestown Exposition.

5. By the teaching of the prevention of tuberculosis in the

public schools, which will ultimately be done in all the States and which our own "Old North State" was the first to begin.

A class of responsible persons who have been more or less tardy in assuming the full burden of their responsibility in this cause is our own medical profession. True, the medical school from which we graduated sadly neglected this branch of medical education, and the post-graduate schools of to-day are equally derelict in this part of the work; but after September and October this excuse will no longer hold good, for at that time the International Congress of Tuberculosis will, during its three weeks session at Washington, offer a post-graduate course in the prevention of this disease such as has never before been offered and of which the world's best specialists will be the instructors. A disease which carries off one-fourth of all those who die between the ages of fifteen and thirty-five is surely deserving of the most careful study on the part of every practitioner, and I trust that every member of our State Association will enroll his name as a member of this International Congress. When we can get the medical profession to realize fully its responsibility and opportunity in this matter one of the greatest wonders of preventive medicine will have been accomplished, and tuberculosis will then soon be as much a thing of the past as is leprosy at present.

TUBERCULIN THERAPY.

BY C. S. GRAYSON, M.D., HIGH POINT, N. C.

Mr. President and Members of the North Carolina Medical Society: It is an established fact that one-seventh of all deaths are caused by tuberculosis. It has been estimated that nine-tenths of all persons living in this country contract the disease at some time in one or more of its various forms.

To digress, if we consider the matter from a purely scientific standpoint, we are forced to admit that at the present day the tubercle bacillus is the greatest factor in nature's great improvement scheme, "The survival of the fittest." Tuberculosis is a disease from which the strong are immune or recover and from which the weak die. A vigorous man, even when he has contracted the disease in a severe form, will recover if given at all favorable conditions. They do not contract it unless temporarily debilitated or exposed to excessive numbers of the bacilli.

It is quite certain that the persons saved by eradicating the bacilli would be weaklings. Many of them would be saved for lives of suffering and for the propagation of a still weaker offspring. We must remember that most of those we would save by eradicating the germ of tuberculosis would be saved for a more lingering and painful death by other diseases.

The tubercular patient is notably cheerful and hopeful. It seems that God created the tubercle bacillus for a sifter of His creatures, to sort out and destroy those whose low vitality would render life to them more painful than pleasurable and whose offspring would still further weaken the race. Were it not for the decided analgesic and pleasurable effects of tuberculosis these weaklings would be condemned to a life of toil, dyspepsia, chronic catarrhs of the stomach and intestines and a host of other painful and melancholic diseases that have no germ with analgesic properties. Physicians in their

desire to save life sometimes forget that death is not the worst evil that may befall a man. Some have gone so far as to say that physicians busy themselves propping up the weak, and for that reason are brakes on the wheels of the Almighty.

When these armies of tubercle bacilli invade the tissues of an individual all avenues by which they can be attacked are closed save that one whose gates are good food and God's free air and sunshine; and by these measures, from a scientific point of view, every one is saved that is worth the saving.

The tuberculin treatment is a vaccine treatment. In tuberculosis pure and simple there is no toxæmia, and therefore tuberculin has no place in the treatment of this disease. To substantiate the above statement we find that the world establishes immunity to widespread diseases in which there is a toxæmia. In the early centuries smallpox almost depopulated some countries of the old world. By the use of Jenner's vaccine and by the prevalence of the disease the world is now immune to such a degree that it is difficult to make a positive diagnosis. The natives of Africa by constant exposure have become immune to the poison produced by malaria. The English and German immigrants, not immune by exposure to this deadly form of malaria, are overwhelmed by the poison and die by the score of black-water fever. Influenza, at one time quite a serious disease, is now of little consequence. The Indian, living in the forest, exposed to snake venom for centuries, has become so immune that he suffers little more than a simple inconvenience from the bite of the rattlesnake. Colles in his law states that a nonsyphilitic woman who has borne a syphilitic child is herself immune, and can not be infected though she nurse the child.

Nowhere in the study of tuberculosis have we evidences of immunity similar to those just enumerated. Were the tubercle bacillus a toxin-producing organism immunity to those toxins would have been established. On the other hand, leaving out the recent decrease brought about by the open-air treatment and better supervision of the general health, tuberculosis has become more prevalent every year.

A tubercular lesion of the skin is termed a lupus. It may make its appearance about the lip, and finally destroy it and the neighboring ala nasi. Pulmonary tuberculosis is simply a lupus of the lung. The tubercle bacilli slowly destroy the lung tissue. This process of destruction goes on until the patient dies for want of sufficient lung tissue to aerate the blood.

The inflammatory processes are greatly favored by the constant respiratory movement. A fractured limb heals more readily when immobilized. Fixation favors healing in pulmonary tuberculosis. It has been found that when tubercular patients are kept at rest in pure open air, where the number and depth of respiratory movements are reduced to a minimum, cures are much more readily effected. For that reason active exercise so warmly recommended by the older physicians has been abandoned. It is the local condition and not a toxæmia that requires attention, and the day may come when if but one lung is affected the corresponding side will be strapped and kept at rest as in pleurisy, until the lesion is healed.

The symptoms of an uncomplicated case of tuberculosis are insignificant and indefinite. You can not conceive of a condition where there are bacilli-secreting toxins without appreciable symptoms. The symptoms are due to mixed infection and to loss of tissue, and not to a toxæmia. Here are the symptoms of a certain condition copied from Osler. Diagnose the case in your own minds. "There is an elevation of temperature, it is irregular in type, sometimes there is a chill, and the temperature may rise to 103 or higher. Owing to the intermittent character of the fever the disease is often mistaken for malaria. Fever may rise in the afternoon without a chill. Profuse sweating is common, particularly when the patient falls asleep." These are symptoms of abscess of the liver and we conclude that similar symptoms in tuberculosis are due to the presence of pus cocci. Osler says that suppurative processes play an important part in pulmonary tu-

berculosis, many of the symptoms of which are due to them. Languor and lassitude result from faulty aeration of the blood. The same results are produced by breathing the air of a poorly ventilated room. In tetanus the toxæmia is pronounced and the ante-mortem temperature may reach 110. Even in acute miliary tuberculosis the temperature rarely goes above 103. The toxins of typhoid produce delirium and unconsciousness, while in tuberculosis the mind is practically always clear.

The toxins of diphtheria, scarletina and a number of other diseases excreted by the kidneys produce nephritis. In tuberculosis such a long continued irritation would produce a nephritis, yet there is none. Toxins have been isolated from tetanus and diphtheria cultures, but nowhere do we read of the isolation of a toxin from the growth of tubercle bacilli.

Behring immunized animals against tetanus and prepared an antitoxin that would protect animals suffering from that disease. In diphtheria we have to deal with a toxæmia, and to prove this conclusively an antitoxin has been prepared by immunizing animals. With reference to this in tuberculosis, Baldwin, of Saranac Lake, says: "Antitoxic serums have met with little success. Trudeau and Baldwin could obtain no evidence of any antitoxic properties in the serum of the horse, cow, chicken or rabbit treated with tuberculin."

We might learn a lesson by observing nature's method of curing tuberculosis. Nature treats the tubercle bacillus as a foreign body and not as a toxin-producing organism. A bullet lodged in the tissues is encysted and gives no further trouble. Nature attempts to encapsulate the tubercle bacilli and in the strong, succeeds. While the bullet is being encysted, though the wound be aseptic, there is slight fever and leucocytosis just as we observe in tuberculosis during the process of encapsulation.

As to the merits of tuberculin let me quote a few leading physicians. Abbott, Professor Bacteriology, University of

Pennsylvania: "As a curative agent for tuberculosis, tuberculin has not merited the confidence that was at first accorded to it. Its field of usefulness is now almost limited to the diagnosis of obscure cases, and for this purpose it is less frequently employed than formerly."

Stevens, Professor Physical Diagnosis, University of Pennsylvania: "Tuberculin is now rarely used as a therapeutic agent, although it is still retained for diagnostic purposes."

Osler: "The use of tuberculin has been in great part abandoned, but recently Koch, Behring and others have again called attention to its possible value."

Shoemaker, Professor Materia Medica and Therapeutics, Medico-Chirurgical College: "Experience has amply demonstrated that, as a curative agent, tuberculin is valueless."

Jenner's vaccine is used to immunize the well, thus preventing the development of smallpox. Who would withhold the vaccine until smallpox develops, then inject it in an effort to raise the patient's opsonic index? If it has virtues why is tuberculin not used to prevent the development of tuberculosis?

Special attention is called to the class of patients for which tuberculin is recommended. Baldwin says: "Tuberculin should be administered to patients who are afebrile and in a state of good nutrition. It is also indicated in early closed pulmonary tuberculosis. In patients whose temperature reaches 101, too much must not be expected from tuberculin. It is rarely wise to administer tuberculin to patients whose minimum temperature does not fall below 99 every day. It should never be given to patients suffering from acute coryza, gastric disorders, fatigue or is feeling 'out of sorts' from any cause."

Koch says: "The application of tuberculin should be restricted to those cases not too far advanced and not complicated by the streptococcus, staphylococcus, pneumococcus and influenza bacillus, since those processes are almost always accompanied by an elevation of temperature. The best way

to guard against the misapplication of tuberculin is to administer it in no case where the temperature exceeds 98.6. The hygienic and dietetic treatment should be faithfully followed throughout this treatment."

Note, too, the time required to effect cures by this treatment. Baldwin says: "It is futile to expect any course of tuberculin treatment extending over two or three months to be of any permanent value. No patient should be given tuberculin who can not follow the treatment for at least five months."

Trudeau says: "I am convinced that this treatment should be extended over a long time. Time is an important element in obtaining the best results. Six months is almost always necessary and a year or more would be better in many cases."

To summarize, tuberculosis is itself nontoxic: (1) Because no toxin can be isolated. (2) No world-wide immunity is produced by its prevalence. (3) Because no immunity can be induced in animals. (4) Because the symptoms are not pronounced as in other toxæmias. (5) Because all the symptoms can be otherwise accounted for. (6) Because tuberculin will not prevent those in good health from contracting the disease.

The tuberculin treatment is a failure: (1) Because a vaccine treatment is useless in a nontoxic disease. (2) Because it can be used only in the mildest cases. (3) Because it fails in these cases without the hygienic and dietetic measures which effect cures without it. (4) Because the same time is required to effect a cure that is required without it.

We conclude, therefore, that infinitely more of these mild cases recover every year without any treatment than tuberculin has ever cured, or, in my opinion, ever will.

EARLY TUBERCULOSIS AND MALARIA; THEIR DIFFERENTIATION.

BY PAUL H. RINGER, A.B., M.D., ASHEVILLE, N. C.

Cases of incipient pulmonary tuberculosis particularly in individuals coming from malarial districts are so often diagnosed as malaria and proper hygiene and diet not resorted to, that a few words on the differentiation of these two diseases may not be amiss.

The differential diagnosis is at times difficult—usually, however, it is quite possible if the case be studied carefully. Let it be understood at the start that reference is not made to pernicious malaria—to malarial cachexia—but to tertian, quartan and æstivo-autumnal malaria as opposed to first-stage pulmonary tuberculosis.

The diagnosis may be considered under three distinct headings:

I. Clinical Symptoms.
II. Laboratory Findings.
III. Therapeutic Test.

Clinical Symptoms.

Chills.—In both diseases we may have actual chills or chilly sensations, but a definite rigor speaks far more in favor of malaria than of tuberculosis—cases of the latter disease having marked chills are usually so far advanced that a correct diagnosis forces itself.

Fever.—A common symptom of both diseases, usually higher in malaria than in early tuberculosis, and rising *suddenly* in malaria as compared with a gradual ascent in tuberculosis. The fever of malaria comes on with a rush—the patient is seized with a chill and in twenty minutes has a temperature of from 101 to 104. A very typical temperature-curve of incipient pulmonary tuberculosis, taken from the record-book of one of my patients, is the following:

11 a. m., 98.8; 1 p. m., 99.5; 3 p. m., 100; 5 p. m., 100.6; 7 p. m., 99.8.

A carefully kept two-hourly temperature record is one of the best means of differentiating the two diseases.

In malaria fever usually drops by crisis—in tuberculosis, by lysis—however, in the æstivo-autumnal type of malaria, fever may last more than twenty hours (this not occurring in early tuberculosis) and fall by lysis. The fever in this type of malaria may even be continuous. The picture then being suggestive of typhoid fever rather than tuberculosis.

Sweat.—Far more profuse in malaria than in early tuberculosis where real sweats are uncommon. Drenching sweats occur only in the more advanced cases of tuberculosis; in malaria they may occur after every paroxysm of fever.

General Feelings.—A most important point in my opinion is the fact that between paroxysms, the malarial patient feels well—the tuberculous patient feels sick. The malarial patient (unless he be the victim of an old chronic malarial poisoning) recovers swiftly from his paroxysm. The tuberculous individual is constantly a prey to the tuberculo-taxius, and consequently feels weak and below par all the time.

Bronchitis.—May be a symptom in both diseases—in malaria is usually diffuse and at the base of the lungs posteriorly—in early tuberculosis often sharply localized and at an apex.

Breath Sounds.—These are of paramount importance, particularly in the apical region. Rough breathing has been well pointed out by Grancher to be the first detectable physical sign of pulmonary tuberculosis. With an afternoon fever, whether preceded by a feeling of chilliness and followed by a sweat or not, if at one apex the breathing is roughened as compared with that at the opposite apex, whether expiration be prolonged or not, a diagnosis of incipient pulmonary tuberculosis is so probable as to be justifiable. Dullness and rales need not be awaited. They set in when the tubercles have coalesced and when bronchitis has set in, rough breath-

ing denotes discreet tubercles. Careful auscultation above the clavicles and particularly in the first intercostal space close to the sternum is a *sine qua non* for the earliest possible diagnosis of pulmonary tuberculosis.

Splenic Enlargement.—Usually present at some time in malaria—not present in tuberculosis.

Herpes Labialis.—Not seen in early tuberculosis; according to Osler, it is almost as frequent in malaria as in acute lobar pneumonia.

Laboratory Findings.

The blood and sputum should be carefully, and (if negative) repeatedly examined in making this differential diagnosis. I again say "repeatedly," for one negative examination, whether for malarial plasmodia or tubercle bacilli, is worth nothing. Furthermore, the plasmodia are often found, but at certain times, preferably during the height of the fever. Not long since in the private laboratory of Dr. Charles L. Minor, of Asheville, I examined the blood of a patient taken while having a chill in the office. No plasmodia were demonstrable. Half an hour later, the patient being in the febrile stage, more blood was examined, and in almost every field of the microscope two or more plasmodia were found. The stain I prefer is the ordinary Jenner, on account of its rapidity and simplicity. When possible, the fresh unstained blood should be examined as well as stained specimens. In examining for tubercle bacilli, morning sputum should be chosen and the thickest bits selected. Much of the success in finding tubercle bacilli depends upon perfect technique, which can not be entered into here, but with proper smearing and staining methods they should be demonstrable if present at all.

We can assert that if blood and sputum be carefully and repeatedly examined for plasmodia and bacilli—if all examinations be negative,—if there be ever so slight a change in the breath sounds at one apex—if intermittent fever and general malaise persist, the case is one of tuberculosis and not of malaria.

Therapeutic Test.

Osler has given us an axiom: "An intermittent fever that resists quinine is not malarial." Therefore, if need be, let quinine be exhibited; if the patient recover, malaria was present; if not, malaria can be excluded.

Stress should be laid upon the fact, particularly in malarial districts, that tuberculosis may set in with fever typically intermittent in character—daily chill, with subsequent fever and sweat—but careful note of the points mentioned should clear up the etiology of the febrile movement.

The importance of a correct diagnosis between these two conditions is more than apparent. Yearly scores of people are sent to Asheville from all parts of the country to rid their systems of malaria, when in point of fact the tubercle bacillus is the prime factor. We do not deny that the two diseases can and do coexist; but we do urge that the most important diagnosis is that of tuberculosis. In this country malaria seldom kills; tuberculosis is our greatest scourge. Quinine in proper doses will shortly arrest malaria—months of rest, fresh air, good food, a minutely regulated life, are essentials to the cure of tuberculosis. Malaria is not communicable save through an intermediate host—every careless or ignorant tuberculosis patient, expectorating broadcast, is a serious and dangerous menace to his family and to his community. Let us, therefore, take these facts to heart, and, even though residing in a malarial district, when a patient presents himself with symptoms suggesting paludism, let us well consider the pros and cons, and exhaust all our scientific knowledge in an earnest effort to discover positively whether we have to deal with the plasmodium malariæ, or with the bacillus of tuberculosis.

SOME ATYPICAL MANIFESTATIONS OF MALARIA.

BY J. W. P. SMITHWICK, M.D., LAGRANGE, N. C.

To begin, it may be safely stated that all pernicious and atypical forms of malaria are caused by the æstivo-autumnal (hæmatazoon falciparum) variety of the malarial plasmodium. I have found no case, either on record or in my practice, which will justify any other statement.

The pernicious forms of malaria are usually confined to the tropical regions in which malaria occurs and, therefore, are not observed by North American practitioners. Malarial hæmoglobinuria, on the other hand, is seen commonly occurring in some sections of our country during the fall months, but as its diagnosis and management are fairly well established I shall confine this study to the consideration of those manifestations which do not resemble malaria as ordinarily seen, but which are due to the presence of the æstivo-autumnal parasite, and which present such symptoms of other diseases as to be easily confounded with or mistaken for them. No attempt at classification will be made, but each form, as I have observed it, will be taken for consideration as seems best.

Hemorrhagic Nephritis.—I use this term for those cases in which there is but little, if any, febrile disturbance, and in which occurs a true hemorrhage from the kidneys. This condition, directly depending on malarial infection, where the blood and urine have been examined with positive findings, has been noted by a number of observers, and there is no doubt that it occurs although some have attributed its occurrence to the administration of quinine. Baker (*Johns Hopkins Hospital Reports*) observed a case of this condition, and in 616 cases of malaria studied by Thayer and Hewetson (*Johns Hopkins Hospital Reports*) occurring in Baltimore, it was noted once only. Pace (*Gior. Internaz. de Sc. Med. Napoli*) reports a case in which the æstivo-autumnal organ-

isms were found in the blood, with no other symptoms of malaria except a true hemorrhage from the kidneys. I have seen two or three such cases. All showed the æstivo-autumnal parasite in the blood and urine, and all had a true hemorrhage from the kidneys. The following case is a good illustration:

Mrs. D...; widow; aged 26 years. Had sustained irregular attacks of intermittent tertian malaria several years previous, but lately had lived on the seacoast, where she had been healthy. She changed her residence to a small town about a hundred miles inland. A few months after this change of residence she noticed a reddish cast of her urine, but, feeling about as well as usual, paid no attention to it. Some weeks later she did not feel well and noticed a slight rise of temperature each afternoon. Also about this time the color of her urine deepened considerably; all of which caused her to seek medical advice. When I saw her she was anæmic, lips pale, temperature 99.5 deg. F., spleen enlarged and tender on pressure, and her general appearance was one of chronic paludal poisoning. Microscopic examination of urine demonstrated a true hemorrhage from the kidneys. The urine was acid in reaction, smoky in appearance, and contained round blood cells, blood and hyaline casts. The malarial parasites could not be detected in the urine at that time, but they were readily found in the blood—the small concentric form. The following day I made another microscopical examination of the urine and succeeded in finding a few of the parasites. Under systematic anti-malarial treatment the patient improved rapidly, the parasites disappearing from the blood, and the blood and albumin from the urine.

The facts presented in this case are: (1) There was a true hemorrhagic nephritis; (2) it was undoubtedly due to malarial infection of the æstivo-autumnal form, as the parasites were found in both the blood and urine; and (3) complete recovery resulted upon antimalarial treatment.

Diseases of the Heart.—Law (*British Guiana Med. Ann.*) is of the opinion that definite heart disease occurs due to

malaria where the patients have lived in a malarious country. Moscato (*Morgani, Milano*) relates the case of a man who had had neither rheumatism, nor any infectious disease like typhoid fever, nor erysipelas, and who had not abused alcohol, tea or tobacco. Five months of the previous year before the time he was seen by that author he had malaria, but when Moscato examined him he showed symptoms of mitral insufficiency. The heart was hypertrophied, albumin was in his urine and his body was œdomatous, and his spleen was enlarged. Renzier (*Rev. de Med. Paris*) finds functional murmurs frequently associated with malarial poisoning.

Functional murmurs associated with malaria are often observed. These are dependent upon the anæmia and general muscular weakness which are always coincident with malaria. They are purely functional, and in my experience always disappear upon the full recovery of the patient. However, it seems that organic disease of the heart as pointed out by Moscato does occur, and the following would appear to be such a case:

William R.... consulted me in 1898. Gave a history of recurring attacks of intermittent malarial fever until about two years previous, since which time he had been doing fairly well. There was no history of rheumatism or infectious disease. Family history was negative. He was a lad of eighteen years; not well nourished, and sallow and cachetic in appearance. Pulse was full, a little rapid, about eighty to the minute, and irregular. There was considerable hypertrophy of the heart and a mitral murmur was present. The beat of the heart was labored, and at times there was a slight dyspnœa when the patient was quiet. Spleen and liver were enlarged, but urine contained no albumin. Patient stated that he had been troubled with "fever cake" for quite a while. Careful and repeated examinations of the blood revealed a few concentric malarial parasites. A later examination showed both the concentric and flagellated forms of the æstivo-autumnal variety. Repeated examinations of the blood also showed the

parasites to be more numerous at times than others. This patient was put on full doses of quinine sulphate and capsicum and strong tonics, with the result of improvement from the beginning. After three weeks treatment no malarial micro-organisms could be detected in the blood. After this antimalarial tonics were administered for four successive months, and at the end of that time there was so much improvement that the patient declared himself to be as well as he ever was. There was some hypertrophy and a slight murmur of the heart, but these have not increased since he was dismissed, and to all appearances now he is well.

In this case there was no elevation of temperature at any time that I saw him; the æstivo-autumnal form of malarial parasite was easily demonstrated; the spleen and liver were enlarged; the heart was considerably hypertrophied, and there was a mitral murmur. Quinine and anti-malarial tonics effected a cure to all intents and purposes. There was an absolute disappearance of all symptoms and signs except a slight heart murmur and hypertrophy. It is my opinion that at some later date his valvular trouble will increase and become troublesome, as it would if dependent upon some other usual etiologic factor. I believe all the trouble in this case was wholly dependent upon the malarial infection, and that it was proven by the microscope and treatment.

Malarial Orchitis.—Charcot (*Rev. de Chirg. Paris*), Corovado (*Chron. Med. Quir. de la Habana*), Suldiffe (*India Med. Jour.*), and Lardier (*Bull. Med. de Vosges*) all report cases of orchitis due to malarial infection. In some of these cases the orchitis occurred during the malarial attack, but in most of them it occurred after pronounced attacks of malaria.

I have seen only one person who had an attack of orchitis which I deemed to be due to malarial infection. The history of the case in question was this: Patient forty-two years of age; married. Had been well for some time previous with the exception of a sallow complexion. He was taken with severe pain in right testicle, followed by considerable swell-

ing. I saw him about two hours after the beginning of the attack. He had a temperature of 102.5 deg. F.; considerable pain in testicle, which was swollen to about three times its normal size. There was no history of injury nor recent gonorrhœal infection. I administered morphine hypodermically and he was soon quiet. Ordered tobacco poultices to be applied to the affected part, and left a dose of calomel to be taken at bed time. About the same hour the next day I was again called. I found him suffering severe pain and a much swollen condition of the testicle; temperature elevated as on the previous day. This phenomenon caused me to suspect some periodical etiologic factor and, accordingly, I took a blood smear for microscopical examination. This revealed a good number of malarial plasmodia of concentric form. I put the patient on full doses of quinine, and all the symptoms rapidly disappeared. This case was, beyond all doubt in my mind, due to malarial infection, as there was nothing else to which it could be attributed. The plasmodia were present in the blood and a complete and rapid recovery resulted upon the administration of quinine.

Malarial Anasarca.—In many cases of malaria in which the infection has existed for a long time it is not at all uncommon to have some œdema, but general anasarca is not common. Pope (*American Prac. and News*) says anasarca is common in chronic cases of malaria. Norton (*Jour. Am. Med. Sciences*) mentions three cases that occurred in the Emergency Hospital, Washington, D. C. In these cases there was marked œdema of the legs following attacks of malaria. The blood of the patients showed many crescents (æstivo-autumnal malaria). These patients recovered when put on quinine regularly. The urine in these cases was negative.

Two cases I have seen will be interesting. The first was that of a boy seventeen years of age. Parents had always lived in malarious section and various members of the family had suffered repeated attacks of malaria. This boy's feet and ankles began to swell about six months before I saw him.

Three months previous to that he had an attack of tertian malarial fever, from which he seemed to fully recover. Two or three weeks later he noticed a swelling of ankles upon removal of shoes at night. After this he had no more malarial paroxysms, was not inconvenienced by urine at any time, though it was reddish at irregular intervals. When I saw him he had the appearance of one suffering from Bright's disease. He was anæmic and there was œdema of nearly all portions of the body, being much marked in legs. There was considerable puffiness about the eyes and face, and the skin was of a pasty appearance. Pulse was accelerated though there was no elevation of temperature. Examination of urine was negative. He complained of aching sensation in bones, and there was slight dyspnœa at times. Was not nauseated, though appetite was very poor and spleen and liver were considerably enlarged. Microscopic examination of the blood showed large numbers of crescents and pre-flaggelating forms of malarial organisms. All these symptoms disappeared, and the boy fully recovered on full doses of quinine and tonic doses of Fowler's solution of arsenic. The other case was similar to the above. It occurred in a man fifty-three years of age, and I was led to believe the trouble to be Bright's disease and treated it as such a few weeks. His urine showed a slight amount of albumin at times, œdema was marked and dyspnœa troubled considerably by spells. His improvement was none, and I happened to think to make examination of blood for malarial plasmodia and found them, both the concentric and flaggelated. I put him on quinine and Fowler's solution and he made a rapid and uneventful recovery.

THE TREATMENT OF TYPHOID FEVER.

BY T. C. QUICKEL, M.D., STANLEY, N. C.

That we have no specific treatment for this formidable disease nor agent that will weaken the organism that causes it remains a fact that we all deplore, but which none of us have as yet been able to modify. We are still limited in our efforts to the guiding and guarding of our patient so that he may offer the utmost resistance and strongest defense of which his body is capable. I would have you regard your patient as a human battlefield, a region invaded by a strong and multitudinous enemy, and the cells of his body constitute the defensive forces. You are to be the commanding general of these cellular warriors fighting for the very existence of the body of which they are the microscopical units. It is our duty to see that these legions are kept in the very highest fighting condition that is in our power by the means at our disposal, and that no obstacle that can be removed is allowed to remain to hinder them in this struggle. We must see that they are properly nourished, secure as much rest as possible, and, above all, that no extra work that is not absolutely necessary is placed upon any of its specially organized groups. It is early in the attack that your services are most needed. The organs must be strengthened, and the overworked ones relieved. I believe that it is during the first and second weeks, the time before the decisive conflict, that the result is most often determined. If during this time we have provided a suitable nourishment, secured a reasonable amount of quiet rest, and have been able to control the diarrhœa and tympanites, the final victory will usually be satisfactory. But if we have been negligent or unsuccessful in our efforts the ill consequences will be all the more apparent when we come down to the turning point in the contest.

Diet.

To find a suitable diet for these patients I often find difficult. Sweet milk, when considered by the physiological chemist, is doubtless the ideal food. But in my experience I have found it unsuited to the digestion of many typhoid patients, forming hard, indigestible curds and aggravating the diarrhœa and tympanites. Buttermilk is often taken with relish and when it can be used is a splendid nourishment. Eggs, well-beaten, flavored and taken raw or the whites may be slightly coagulated, sometimes serves as suitable food during this illness. I might mention other articles of diet suitable for these patients, and doubtless some of you can make helpful suggestions. But it is no one diet that will suit all or even a majority of these patients, and I desire to urge you to study carefully the digestive ability and individuality of each digestive tract and so modify your diet that it will be digested and assimilated. If you can not secure a diet that will be digested and used it is preferable to withhold all food, because this decomposing and fermenting contents in the alimentary tract will still further irritate the inflamed bowel and add more poison to an already poisoned system, and thus decrease his strength rather than sustain it. The too frequent feeding must also be avoided. Every five or six hours is often enough to feed a sick stomach, and if the diet is suitable, enough can be taken at each feeding to satisfy the demands of these patients.

Rest.

It is of great importance that we secure for our patients as much rest as possible. To keep them in bed and thus secure bodily rest, is after the first few days little trouble, for they do not, as a rule, feel like sitting up. To secure the much-needed mental quiet and rest is often more difficult, especially during the first week. Their business cares and daily duties are not so easily laid aside at our direction, but fortunately, they are soon forgotten by most patients. However, there is one source of annoyance and a disturbance of

their mental quiet which we can and must eliminate from the very beginning. I have reference to the presence of visitors in the sick room, with all their solicitous inquiries, wise suggestions, and disturbing gossip. This you may find hard to do if you serve a rural district such as I do, where we are dependent upon the family for the care of the sick member. But you owe it to your patient and yourself to see that your directions in this matter are observed. By so doing you will eliminate one of the potent causes which exaggerates the nervous excitement usually present during this illness.

Medicines.

In an uncomplicated attack, there is no indication for any extensive use of medicines. But I am an advocate of the beneficial influence of intestinal antiseptic agents. Not that I hope to destroy any of the typhoid baccilli by their use, and it is not for this purpose that I employ them, but to hinder the fermentation and decomposition of the residual food and secretions of the bowel. That we can prevent to some extent these changes is apparent to me in my work, and does not seem impossible when we consider the small quantity of preservative agents that is required to prevent these changes in milk, meat and fruits outside of the body. I use salol for this purpose. In addition to this the old and time-tried turpentine emulsion to which I add tincture iodine, is the treatment I most often employ. Additional medicines must be determined by special indications as they arise. When we need stimulants strychnine and caffeine are most often indicated. Alcohol is very rarely indicated in my work, and I consider it harmful to the majority of the patients. Its paralyzing effect on the sympathetic nervous system and tendency to irritate the stomach should make it a rarely used agent in this disease. My only use for it in typhoid fever is in case of depression where a rapidly acting agent is required, and not for continued administration.

The use of large doses of quinine early in the attack as a

means of diagnosis should rarely be necessary, and its injurious effect may be evident during the remainder of the illness. Ringing in the ears, nervous tremors and sometimes delirium owe their presence in part to the energetic administration of this remedy. Opium is another agent, while it is indispensable in certain complications, should be limited in its use to these alone. It should not be used to produce sleep nor control the diarrhœa. While it produces temporary comfort, the disorganizing and blocking up of the secretory organs will overbalance the temporary comfort resulting from its use.

Fever.

The regulating of the temperature is to be carefully directed. I believe that harm has been done by our too energetic measures for its reduction. To plunge our patient into ice water is too heroic for me. Hydro-therapy is to be commended, where we have a trained nurse to apply it, but is oftentimes useless or even harmful as applied by untrained hands or sympathetic friends. Under these conditions we not only fail to reduce the fever, but exhaust the patient in our efforts. Under certain circumstances we are forced to some other means of reducing the fever, or not reduce it at all. That we have gone to the extreme in our condemnation of the antipyretic drugs I believe we are beginning to admit. I sometimes find that I am forced to use them if any reduction of the fever is procured; and I have seen none of the alarming depression of which we are often told. They should be used with care, and are not applicable to all patients; but under careful supervision I find they serve me well.

Complications.

The various complications to which these patients are liable are too numerous and not within the scope of this paper; but intestinal hemorrhage is so much a part of this disease that its consideration should be included. This is in my experience the most frequent cause of death, and I so rarely feel

so helpless as in the presence of this complication. Morphine hypodermically is the most rational means for its control. The minimum amount of food should be given. Do not stimulate unless the demand is imperative and extremely urgent, and do not continue after the immediate danger is passed. Your effort should be to maintain the blood pressure just as low as safety will permit. Normal saline solution is not indicated as a routine measure. You should aid nature in her efforts to stop bleeding, and a low blood pressure is the most advantageous condition to maintain.

Prophylaxis.

We should be explicit in our directions to the members of the family likely to come in contact with the patient, regarding the dangers from the excreta, and the care they should exercise not to carry it to their mouths or well or anywhere that it might become a source of danger. The hands should be disinfected after each handling of the patient. The discharges should be disinfected and then buried, so that flies can not get to them. Your responsibility is great and we owe it to our friends to fully direct them in the details of prophylaxis.

Convalescence.

I do not allow any change of diet for one week after the temperature has returned to normal, and then only semi-solids for the next week; after this time solid food may be added by degrees. The patient should remain in bed for ten days after the disappearance of any fever.

MILK SICK AND MILK SICKNESS.

BY J. A. REAGAN, M.D., WEAVERVILLE, N. C.

The thing causing the disease, for want of a better name, is called milk sick; the disease milk sickness. Now, what is it that causes that sickness? This is easier asked than answered. There has been more time and scientific labor spent in trying to find out what kind of poison it is than any other poison known, and yet it goes without any better name.

This poison, whatever it may be, differs from all the known poisons. It may lie quietly in the system for some time without exhibiting any of its toxical powers, until the person or beast is forced to take exercise. It is more ethereal and delusive than any poison with which I am acquainted. Hence it may be said to be *sui generis*. A Mr. Hall and wife on Goose Creek died from eating a chicken that had picked some flesh from a cow that died of milk sickness. A respectable citizen living on the same creek had put up his hogs in a lot to fatten them. When one of his cows seemed a little sick he put her in the same lot with his hogs. The cow died and the hogs ate some of her flesh and he lost thirty head of his hogs. A respectable citizen living some years ago says he has seen as many as seventy dead buzzards around a dead cow, besides several sick, but not dead. These cases show this poison exceedingly dangerous.

Above Nashville, Tenn., there is a creek in the hills called Goose Creek. On one branch of this creek is a fine range and a great many head of cattle and mules were turned in for the winter. Dr. Yandell, father of Professor Yandell, of Louisville Medical College for many years, says: "One of my neighbors concluded to winter his mules on this point, as the green cane was very abundant, believing that nothing could poison a mule; but to his utter astonishment two or three out of five died."

Captain William Thompson drove his cattle to this knob some years ago for the purpose of wintering them. They seemed to do well during the winter, but in the spring when he started to drive them home thirteen out of twenty died before he got home with them.

I think it best to say that exercise, either of man or beast, develops the latent poison in a few hours; hence it is best to exercise all animals intended for food before killing them. I do not deem it necessary to enter into a minute description of places where it is found, as it is only proper to say it is always found, so far as I can learn, in loose, loamy mountain sections where the timber shades the ground. In 1848, when I first came to North Carolina, there was in the mountains of most of this western range more or less milk sickness found. Now that the country has been cleared up it is a rare thing to hear of a case of milk sickness.

Dr. Woodfin was an educated physician who practiced mostly in Macon County. I went with him to see a case of milk sickness, and I am certain I never want to see a man suffer as he did. Two stout men were holding him in the bed, but frequently had to call for a third to keep him there. He would have suffered no more if he had been on a bed of hot embers. I never before or since saw a man suffer as he did.

There is more credit due the physicians of Nashville, Tenn., than any other place for the work done in seeking the cause of so many deaths of stock and persons. They finally located the place and fenced it in, then stock were turned out without fear; but yet the question as to what it is was not answered. Some said it was a vegetable, others thought it a mineral of some kind. They in a body went over the whole enclosure and every vegetable whose properties were not fully known was sent to Philadelphia to the chemist, who analyzed all sent, and his report was short: "No poison in any sent." But this did not satisfy the good men and physicians engaged in trying to find out what killed the stock.

They then brought up hay from a farm below and put it in the enclosure and let it remain till after daylight; took it out and fed it to a cow with the dew still on it. She died. They skinned her, hung the hide in a barn. The rats ate the pulp and it killed them; the hogs ate the cow and they died. It is known that a hog is harder to kill with poison than any other animal.

Dr. Hardwick told me that when a boy he had to take slops to a sow down with kidney worm, some distance from the house. He said he put a spoonful of arsenic in the slops to kill her. His father told him the next morning to take some food to the sow, but he said, "Father, she is dead by this time; she was very bad yesterday evening." But his father made him go, and to his astonishment he met her coming home. The arsenic cured instead of killing, as he expected.

But the buzzards ate the hogs and died. I know of no other poison passing through three animals to kill the buzzards. I do not suppose anything will eat a buzzard.

I regard that it is settled that milk sick is a gas that rises from the ground and settles on vegetation. What the gas comes from has not been discovered as yet. Dr. Mentlow says the milk sickness has prevailed as far back as 1812. It was then called "the puking fever" as all or most all throw up.

Before I close this communication or article I think it proper to give the most prominent symptoms of this frightful disease. One of the earliest symptoms is a weakness in the calves of the legs and general lassitude after taking any exercise. They sometimes yawn and stretch as if going to have a chill; this is followed by pain in the back and head and a disagreeable sensation about the stomach, and more or less thirst. Then we have more or less fever; then the thirst increases until it is intolerable. The bowels become constipated and are hard to move; the pulse increases in frequency; the headache unbearable; the patient rolling from side to side of the bed straining to vomit every few minutes, calling incessantly for water. These are the general symptoms. The

treatment then was large doses of calomel and blisters over the stomach. But I have found the best and surest remedy is about equal parts of honey and peach brandy mixed, and given as required. With this remedy I have never lost a patient. Of course the bowels must be regulated, even if we have to resort to croton oil, but I have never had to do that but once. I have not had a great number of patients, but never lost one. In convalescence care must be taken to have a good nurse that will watch the patient and not let him hurt himself if he should become hard to manage.

I unfortunately once had an attack by eating a little butter at supper in a section where there was at that time a little milk sickness; and singular to say I felt the symptoms for three years at the same time of the year. Since then I have had no symptom of the disease, and I shall be very thankful if I never have even the shadow of the symptoms.

THE NECESSITY OF QUARANTINE IN PNEUMONIA.

BY CHAS. B. WILKERSON, M.D., APEX, N. C.

In this paper I advocate no new theory but one which has in no way been perfected by the profession. I have selected no new disease but one which, by its high increasing mortality, has become the champion of all diseases of death.

The term pneumonia is still looked upon by some as an anatomical, not an etiological disease, for it is by no means settled that the disease is not produced by a large number of the various forms of bacteria. These bacteria are the immediate cause of pneumonia, the intermediate or predisposing causes, being numerous and imperfectly understood; but the principal one to be considered is that indefinite idea, summed up in the term "catching cold," believed by the laity to be the prime cause of the disease; but in truth we look upon catching cold as a predisposing factor to infection; and as some form of bacteria is always found in the respiratory tract, gathered from the air we breathe, the frequency of invasion of the lungs is explained. But, granting this to be true, I prefer to limit my paper to the broncho and croupous forms of pneumonia, the immediate cause of the larger per cent of which is the pneumococcus; for from this infection comes the endemics and the epidemic.

Most hospitals and institutions for the care of the sick observe some form of quarantine for their pneumonia patients, especially in the maternity wards, and since the endemic during January, 1908. In my practice I am convinced that we, as general practitioners, should adopt it as our first treatment in every case of pneumonia, for who is so perfect with symptoms and diagnosis to say what case is the beginning of an epidemic?

Why should we quarantine pneumonia?

1. *Distribution.*—Hare says: "There is no doubt that it is the most common of all acute infections." Osler says: "It is the most widespread of all acute diseases." And in fact most authors are agreed on this point.

Therefore we must agree that pneumonia is the most general of all acute infectious diseases, found in all climates, especially the damp; during all seasons, but most prevalent during the winter and earlier spring months. It attacks more people of all ages than any other acute infectious disease. It visits the cradle of the babe, and hovers over the couch of the aged, while no person is exempt between these two extremes.

2. *Fatality.*—Pneumonia is the most fatal of all acute infectious diseases. The census for 1900 shows a mortality of 105,971, and during the epidemic in the spring of 1903, there were more deaths from this disease than from all other preventable diseases, and each year the mortality is increasing, endemics and epidemics becoming more frequent; and to-day, with all our medical skill, it continues to increase, even higher than when the pathological changes of the disease were unknown.

3. *No Specific.*—With all our therapeutical knowledge no one has been able to give to our profession a specific to check the onslaught of this disease, when once the person has become infected. The physician can only guide the patient to a favorable crisis or lysis.

Then, knowing the helpless condition in which the physician is so often placed, it appears to me that at the present time, with no specific for this disease, our only hope to benefit mankind and lessen the mortality is through a quarantine system lessening the number infected.

4. *Sequence.*—Unlike many of the acute infectious diseases one attack does not confer immunity, but predisposes to subsequent attacks, which lowers the vitality of the lung tissue, leaving the individual in a more susceptible condition for other infections. Influenza sets the pace, pneumonia hastens the gait of lowering the vitality, and tuberculosis closes

the scene of many a life, for it is through this channel of sequences that a large number of tubercular patients have drifted.

Then to sum up, the number of people infected, the high increasing mortality, no specific treatment and the serious sequence, we must conclude that some form of quarantine is absolutely necessary and is the only hope at present of reducing the death rate.

Whatever form of quarantine we should adopt should be rigidly enforced against individuals who are already suffering with some of the predisposing factors, as old age, overwork, alcoholism, typhoid fever, influenza, bronchitis, diabetes, tuberculosis, visceral diseases, chronic nephritis or, in fact, any disease which lowers the vitality, for from these comes the high mortality and not from the robust. No one contends that every case of pneumonia is contracted from another, or that every one that comes in contact with an infected person contracts the disease, for the germ pneumococcus has been demonstrated in the mouths of healthy individuals, the vitality of the person being such as to overcome the virulence of the germ present, but by sudden exposure to cold or traumatism this germ gains an entrance and the individual becomes infected; and after the germ, having multiplied both in number and virulence in this subject, another individual of like vitality may quickly succumb to the disease without exposure.

Furthermore, the healthy individual whose air passages are in perfect physiological condition may be intimately associated with a virulent infection and not succumb to the disease, for the vitality of such a person surpasses the virulence of the invading germ. The healthy nurse and doctor usually come under this head; but even these, by losing sleep, sudden changes in temperature, or by breathing the dust of a shaken carpet of a room, lowering the vitality of some part of the air passages, may become infected.

Hare says: "There is no doubt that the disease is capable

of being spread from one to another, and especially to patients suffering with other constitutional diseases, the vitality having already been lowered, for eight out of eleven of my typhoid patients were infected by admitting one croupous pneumonia patient into the ward." Osler says: "At times it may assume epidemic proportions or may be endemic to a family or school." Caille gives the following definition: "An acute infectious endemic and epidemic disease, beginning with a chill." In fact, all authors I have consulted agree that the disease may spread from one to another, but none insist on a strict quarantine, as in smallpox, a disease which at the present day, by the use of the specific vaccine, has a mortality less than two per cent, or one-tenth as high as pneumonia.

In order that you may understand my attitude more fully I will give you a report of some of the cases that convinced me that pneumonia is always infectious, and, after having multiplied in number and gained in virulence in proportion to the number of subjects it has passed through, becomes contagious:

January 15th my colleague was called to see a schoolboy suffering with pneumonia. This boy was attending a free school in the rural section. On January 18th I was called to see another student of this school, a boy fifteen years old, and a chum of the boy already infected, suffering with croupous pneumonia, a very virulent infection. The older brother, room-mate and close attendant to his younger brother, on January 24th became infected with croupous pneumonia. The infection was much more virulent in this case than in the preceding. This family was composed of these two boys already infected, a sister thirteen years old and two younger brothers, six and eight years old. I immediately ordered that these two younger boys and sister be sent away; but, as the father and mother felt that they could not dispense with the services of the daughter, she was kept at home to help nurse those already sick.

January 28th this girl was taken with a chill, and a violent case of croupous pneumonia of both lungs followed.

Special to note was the fact that the germ became more virulent as it passed through the different victims, for each one affected was worse than the preceding one. The younger brothers, six and eight years old, who were not allowed in the room at the beginning and later were sent away from home, escaped the infection, although suffering with colds, making them more susceptible both on account of age and lowered vitality.

There were several other cases from this same school which I am unable to report, as they did not come under my charge, but it is evident that this infection began in this school, and with an enrollment of some forty or fifty pupils five per cent or more became infected with pneumonia; but, as you may have noted, not all infected at one time, but from the original infection the disease spread.

January 16th, called to see a woman, Mrs. M....; married lady, suffering with broncho-pneumonia of both lungs; pregnant seven months; weighed two hundred and twenty-five pounds, with heart and kidney complications. The family, as soon as I gave out the diagnosis, immediately sent for her younger sister to nurse her. On January 22d the patient died; the same afternoon the younger sister nurse became infected with the same type of pneumonia. During the sickness of the last-named case a young girl twelve years old was continually in and out of the sick-room, carrying things needed and assisting in nursing the patient. January 25th she became infected, and another case of broncho-pneumonia developed.

The special point I wish to emphasize is the fact that the infection from the school was croupous pneumonia, and as the infection spread it did not change the type of the pneumonia, but each suffered alike.

The family last reported had broncho-pneumonia, and each one infected presented the same type, both lungs being infected in each case, showing that the germ present produced this one form of pneumonia. This is suggestive that each pneumonia had its specific germ.

There may be some who think I am taking a rather radical stand on the spread of this disease, but in reply to this I will ask the question, In what other way are we to lower the death rate of this most dreaded infection? My answer is, by a system of quarantine lessening the number infected.

Whether the disease is contagious or not, the fact remains that no pneumonia exists unless produced by some form of bacteria.

Their destruction outside of the body, should we know how and where to find them, would mean a great deal for prophylaxis, and any patient infected should always be considered a source of multiplication of these bacteria and of the consequent propagation of the disease. Therefore every precaution possible should be taken with those of lowered vitality, both for direct and indirect contagion.

But the point I wish to stress is the duty of the family physician in pneumonia. He is the man who has to battle with life and death against this much dreaded disease, and it is through and by him that relief must come. The family should be instructed as to the prophylaxis necessary to protect them, while the doctor should let quarantine be second to diagnosis in his treatment.

In closing, considering the fact that more people die from pneumonia than from any other infectious disease, that it is a forerunner of tuberculosis, the mortality of which is second to none except pneumonia; that the mortality is increasing; that at present we have no specific with which to check its forward march; that it is a complication of most all diseases of childhood, I contend that it is time for our profession to adopt a systematic quarantine, and while making such thorough investigations of tuberculosis we should try to prevent the spread of pneumonia.

THE EXAMINER'S GOLDEN RULES FOR LIFE INSURANCE WORK.

BY ALBERT ANDERSON, M.D.,
Medical Director Jefferson Standard Life Insurance Company, Raleigh, N. C.

"A Declaration of Independence for the Family" is the fundamental principle and keynote to life insurance. With this in view we should be always on the alert to conserve its interest and promote its development; to do this I do not know a department that has more to do to gain this end than the medical. Therefore, whatever rules that promote and conserve its interest and development are golden. We want to hew to the line, give "precept upon precept, here a little and there a little," till in our bulletins and journals these rules are thoroughly impressed upon the mind and observed in the work of medical examiners.

Your first impression in meeting an applicant should radiate like the spokes of a wheel to the circumference of his entire personality with regard to his manners, expression, color, countenance, gait, speech, hand-grasps, occupation-marks, dress, sequelæ of recent illness, present condition of physique, etc.

Do this in a way as to make the applicant feel that he is in the presence of a congenial friend as well as an examiner.

Put your subject forefront to the light.

Do your work in the quietest obtainable place.

Observe the rule of lovers—be alone—and don't allow the presence of any other party or parties, except the presence of the husband or lady friend during the physical examination of a female applicant.

Be sure he understands the meaning of all questions.

Arrange the clothing so that your inspection and examination can cover the entire chest with minuteness.

Know the specimen of urine gotten was the applicant's and his identity beyond question.

Begin with the first question and take them in order to the last, and then review for the purpose of determining that there are no errors or omissions, no ambiguity or obscurity.

Learn to be rapid, yet thorough and concise in your report.

Is there any necessity for special instruction for this work, considering the four years course in our best medical schools? I think so, and I have learned that in the last four years many colleges and post-graduate schools have introduced into their curriculum a special course for medical examiners. Insurance companies welcome this because of its need. The doctor has been trained for the consideration of diseases, not for the consideration of "average health"—a patient seeking after health through the counsel of a doctor, his training has led him not to weigh and determine the truth of statements of a man applying for life insurance. To a great many applicants a life insurance company is impersonal and a soulless corporation out of which they may be permitted to extract a few thousand dollars on the payment of a few premiums without hurt to conscience, but with commendation of his foresight by friends and loved ones enjoying this fruitage.

The relations between agent and examiner are regarded either too antagonistic or too sympathetic. There should be the "golden mean," and this comes through tact, affability, *"suaviter in modo;"* hold absolutely to the interest of your company and be pleasant, reasonable and polite to agents in rejecting their applicants. To do all this successfully demands special training of our examiners, for the possession of this knowledge or power does not come through intuition or spontaneity.

As to identity an honest and intelligent examiner can detect an impostor, because criminals are fortunately only cunning, but not intelligent.

An elaborate technique is not at all necessary to arrive at a definite idea of the physical condition. To know the normal well is necessary in order to recognize the abnormal. As suggested above precision and rapidity are the main points to

cultivate in insurance work. The entire chest should be examined in every case. Don't make the mistake that it takes too much time to do a careful and systematic examination. System and skill take less time than an examination made without following a correct method. To summarize, I would say accurate technique, eyesight and hearing, a practiced hand, a knowledge of anatomical landmarks of the chest, and to know the physical signs of health and disease are the essentials of equipment.

The clothing must be properly arranged to examine the chest thoroughly; and I mean by this to remove them and have the whole chest exposed—to roll up the shirts under the armpits will cover the apices of the lungs—the very area where tuberculosis begins. Experts say that it is impossible for them to detect the crepitation of an incipient tuberculosis through starched linen. My plan is to remove clothing down to the waist with exception of the lower undershirt, which can be opened and rolled back out of the way so as to bring into view every part of the naked chest. In women, remove corset and other articles of dress or so adjust them as to permit a thorough examination—exposing the upper chest and shoulders; and this can be done in a way to gain the consent of applicant and give no offense to the modesty of any sensible woman. Right here I would suggest that you use your best tact and judgment in the different steps of your work, and this can be done in a way to allow you to go forward in your examination to completion with mutual interest.

Bear in mind the fact that it is not the acute infectious diseases that play havoc with our mortality rates, but early and destructive mortality comes from chronic diseases that ought to be discovered and rejected, and thus save three-quarters of the actual mortality for the first year or two due to these underlying conditions discoverable by following the above suggestions. You can see the importance of this from the viewpoint of justice to the policy-holder in properly grading applicants. Invalid lives, average lives and sound men

of untainted stock, all thrown into one class, make premium rates higher than they should be for the latter class.

Heart disease and its kindred troubles should not appear to any appreciable extent for at least five years after the issuance of a policy, if the physical examination be properly made, is declared by Greene, and yet he gives statistics from both British and American tables that these troubles commenced during the first year, and cites eleven cases in his book coming under his own observation within six weeks to two years; and further states the list could easily be quadrupled.

These mistakes are made among examiners of all companies and the causes are chargeable primarily to the companies. The examiners are not sufficiently impressed with the idea that their work is all-important and official. Why we pay the liberal fee of five dollars for each examination is because we want a man competent and reliable, with a sense of responsibility resting upon him as a commissioned officer. Another cause is said to be the lack of definiteness in the company's requirements. We put such questions in our examination blanks which we think are the most important to get all the necessary information, but every competent examiner should not only answer every question but, after doing this, if he knows any other necessary information should give it, or he fails to meet his responsibility and earn his fee. Failing to detect incipient tuberculosis or heart disease has cost insurance companies millions of dollars, and this failure comes from lack of a proper place in which to examine, as well as incompetency or carelessness of the examiner.

RECIPROCITY.

BY A. A. KENT, M.D., LENOIR, N. C.
Ex-President N. C. State Board of Medical Examiners.

Reciprocity between States as applied to the practice of medicine means an agreement between two State Boards of Examiners, by which each will recognize the license granted by the other and grant to the holder of such license from one State the license to practice medicine in the other State without a second examination. For example, the Iowa Board will recognize the license granted by the North Carolina Board and grant a license to practice in the State of Iowa to an applicant holding a license from the North Carolina Board without requiring the applicant to stand an examination before the Iowa Board. This upon the surface seems to be a very simple proposition, and much to be desired by doctors moving from one State to another. Only a very few of the best qualified doctors could pass these examinations after they have been out in practice a few years without first taking a special course of study to prepare themselves again upon the fundamental branches. At first we wonder why it has not long ago become common custom. When we investigate the question we find it to be attended with many obstacles, complications and dangers, some of which are almost insurmountable.

If there were but a few States and all had for years maintained a somewhat uniform standard of requirement, and if all applicants were capable and honest, it would be an easy proposition. But we must remember that there are now in the United States fifty-one political divisions, and that the conditions and environments in these many divisions differ widely, making very different standards of requirement necessary. The legislation in each has grown up somewhat sporadically, many times more in conformity to the ideas of the laity and nonprofessional legislators than to the ideas of medi-

cal men. Some States have a single board, in some there are mixed boards, in others two or three boards, our State having two boards at this time. In some the different sects are recognized in one way, in others in some other way. In some a high standard has been rigidly maintained for a long time, in others for only a short while, and in yet others such a standard has not been attained. While the legislation of the several States has a general tendency upward and toward uniformity, it is more or less chaotic and unstable. Such being the general condition throughout the States, reciprocity should be embraced by North Carolina with a great deal of careful reserve and prudence.

Every State has absolute control of its own domain in all matters of police regulation, the practice of medicine being one of them. It has the right to fix the standard that it will require of its own citizens and others primarily licensed in the State. It also has the right to say whether or not it will recognize the license granted in another State; and if so, to fix the terms upon which it will grant such recognition. This power has generally been vested by the States in a board of health or a board of medical examiners.

The Board of Medical Examiners of North Carolina, having been created by act of the Legislature of 1858-1859, is the oldest medical examining board that has been in continuous existence in any of the States. The medical profession of the State has always enjoyed great privileges and likewise great responsibilities. We control ourselves. We have been the authors of all important laws governing and promoting the practice of medicine in the State. The doctors have likewise been the authors of all important legislation of the State for the protection of the public health. While we have incidentally safeguarded the interests of the profession, we have always made the protection of the people and the public health of the State of first importance. The conditions and environments of the State being considered, our medical laws are about as good as we could wish for. We have also reached

the time when our State boys, who are homogeneous with the people, are not only supplying the needs of the State, but are crowding one another in the profession. We do not need to open a new and easy way of entrance into the profession in order to supplement the supply of doctors.

But we are living in an age of progress and must keep pace with the times. While we must safeguard with jealous care against the entrance of undesirable outsiders, we must not shut ourselves within a wall, refusing to recognize the better class of doctors who come to us from other States, thus creating the impression that we are trying to maintain a monopoly, and working prejudice against our own licentiates, who will in the future be moving to other States in greater numbers than we receive in return.

This matter of reciprocity is with us and will not be brushed aside or smothered down, even if we desired to do so. In many of the States it is an established fact, and in common practice. As many as fifty reciprocal licenses per year have been granted by some of the States. It is in keeping with the greatly increased facilities for better and more general knowledge in regard to all sections of the country. Sentiment in favor of it is growing rapidly in all the States. There are at this time some five or six national organizations that come together annually and discuss this question with a view to establishing a uniform standard of requirement and general reciprocity. There exists such a diversity of environment that it will be many years before such a uniform standdard can be secured and maintained in all the States. But the work along this line has disseminated much knowledge, and has created such a widespread and popular demand upon us at this time as can scarcely be resisted.

The law which was enacted by our last Legislature upon this subject was in obedience to this popular demand, and not desired by the profession in the State. In fact, it was resisted by the profession upon the belief that the demand at that time was being made by a few undesirable persons, who

hoped by means of reciprocity to evade our careful examinations and obtain an easy entrance to the profession in the State. In fact, there was no evidence at that time that there was a general desire on the part of the people to open new and easy portals into the profession, and thus meet any demand for an increase in the supply of doctors for the State. However that may have been, we were in great danger of unconditional recognition of all license of the other States, without discrimination, being forced upon us by act of the Legislature. Thanks and praise be to Dr. R. H. Lewis, of Raleigh that this legislation was so directed as to leave the matter of reciprocity in the discretion of the State Board of Medical Examiners. We were very fortunate in having a wise and patriotic member of the profession in our capital city at that time, as in many other instances, to take care of our interests. If the effort to force unconditional recognition of the licenses of all the other States upon us had been successful North Carolina would soon have been flooded with the undesirable from all sections of the country.

Your Board of Examiners at its last meeting formulated a set of rules for reciprocity that would admit to the profession in this State those applicants from other States holding a license from States having a standard of requirement equal to our own. To have admitted those who had obtained a license from a State with a lower standard would obviously be discriminating against those who were offering to pass before our own board, against our own boys. This would be unjust, and would ultimately force our boys to go before the boards in other States with lower standards and then come to North Carolina and demand that the license from the other State shall be recognized. As our standard is higher than that of all but two or three States we could only reciprocate in a very limited way. We can, I think with safety, say we will recognize the license of an applicant from another State who upon examination made a grade as high or higher than our standard of requirement. This would enable us to recipro-

cate with most of the States, and would be greatly to the advantage of our licentiates who wish to remove to States having a lower standard than ours.

The matter of reciprocity or recognition of the license granted by another State Board should always be put in the hands of the State's Licensing Board. While there should be some conference and general agreement on the part of our State Board with the boards of other States as to reciprocity, it should be understood by both that it is to be reciprocity for the benefit of the *bona fide* doctors of each State of the desirable class, and not for the purpose of opening an easy avenue into the profession in either State of the undesirable class. We only want the better class who may come to us from other States, and not just any who may hold a license. On the other hand, we should be discreet in the class of men that we recommend to the other States for reciprocity. There are good and bad in the medical profession as well as in other avocations in all of the States. We should stand ready to receive the good, and at the same time discriminate against the incapable and the bad. It should always be kept in mind that the undesirable are apt to be the first to try to avail themselves of it. They will always be the most numerous and the most clamorous for it.

Our board should have a very complete and comprehensive form for the applicant to fill out upon making his application. Without this very important matters of requirement are apt to be lost sight of. No license obtained other than by examination should ever be recognized by our State. The photograph system for identification should be adopted and strictly adhered to; and all other safeguards against cheating and fraud employed. It would be well for the secretary of the board to be empowered to administer an oath to all applicants for examination as well as reciprocity to the effect that the applicant is the person that he represents himself to be; that he is the rightful owner of the license and diploma which he holds, and that he is not addicted to any drink or drug

habit to the extent of impairing his usefulness as a practicing physician.

No State Board should ever undertake to examine the recently graduated citizens of another State and recommend them for reciprocity; nor should any State ever allow its citizens who have recently graduated to obtain license before the Board in a Sister State and then come to the home State and demand recognition on the grounds of reciprocity. If one could go before the board in a sister State, pass the examinations and obtain a license that would entitle him to practice in the home State, there would soon be a scramble to get before the board that had a reputation for being easy to pass. There would be no chance for the preferment of charges against the man of bad character, for no one could know when or what board he would appear before. Substituting and other cheating could be carried on with less risk of detection. It should always be restricted to individual cases, and exercised upon a high plane. If properly conducted upon a high level of professional honor, dignity and courtesy it will be of great advantage to the worthy doctor who is moving from one State to another. It should be well understood that it is for his benefit and for him only. It will not only save him great embarrassment, but also the expense, labor and time necessary to preparation for a second examination

SURGICAL CONSCIENCE.

BY JOHN C. RODMAN, M.D., WASHINGTON, N. C.
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In searching the labyrinth of thought and delving into the recesses of memory for an idea, a subject or a title, the evolution and development of which, according to my views and experience, might prove interesting and instructive to this Society, there have passed before my mental vision many questions, old and new, which are of vital importance and fascinating interest alike to the profession and to the public at large.

But upon reflection it would seem that if I could bring to you new and different thoughts, even upon an old and time-worn subject, my efforts in this direction would not prove to be entirely without success.

Would that my knowledge were greater, my wisdom more profound, and experience, the greatest of all teachers, had been upon a broader and wider plane. Then, perchance, I would have approached the subject with more temerity, having greater confidence in my ability to impress you with the fact that, though this question does not bristle with vaunted theories of unsolved scientific problems, nor of remarkable and brilliant operative procedures. Yet it is a question of vast concern, both to the individual patient and to the professional man; to the former, for he is the ultimate sufferer or beneficiary; to the latter, for he becomes a better man, a better physician by the possession and cultivation of what, for a better term, I shall call "*the surgical conscience.*"

I do not mean to convey the idea that I am using the word conscience solely as it is ordinarily accepted, "the sense of right and wrong," but more than this is implied in the surgical conscience, which I shall define, as that faculty or characteristic or what not of the surgeon who, after having made a diagnosis of the pathological conditions, will have the courage

of his convictions and so act that always he shall do that which in his inner self he believes to be for the best interest of his patient, without regard for the adverse criticism of friend or foe, self-emolument or professional advancement.

In this progressive era of aggressive surgical procedure, the temptation is ofttimes strong to do something active, something radical, perchance to avoid the unfriendly criticism of the so-called friends of the patient, who insistently insinuate that Mr. A or Mr. B has been recently operated upon for the same trouble and is now out again well and strong; or maybe to receive the plaudits and commendation of our admirers and supporters, who would give us the reputation for being bold and daring surgeons. No matter the after-result, who knows when an unsexed and childish woman mourns in secret the sad decree of fate were the best really done?

Upon the other hand, in the rush and hurry of professional work, not quite sure as to diagnosis, when our cares and responsibilities seem greater than we can bear, a waiting policy, an expectant plan of treatment, may tempt us to put off for tomorrow what future events may prove should have been done to-day, and the result, unpleasant retrospection; in truth, the effects of the surgical conscience. The statistics of deaths from appendicitis will give to the procrastinating operator room for much reflection and self-criticism, if he cares to enter that uninviting field. The remedy for the preventable death of unrecognized ectopic gestation would seem to the inquiring mind clearly to be the cultivation and improvement in the art of diagnosis, and diagnosis is the foundation of the science of medicine.

The early history of medicine shows that the objective class of systems were taken more into consideration in arriving at a conclusion as to the nature of the ailment than other things. The color of the urine, the odor of the sweat, the expression of the countenance, etc., were deemed sufficient for the man of reputation and skill. Time has changed much since then, though even now we hear of Dr. C. of D. who is a natural-

born physician, having cultivated the power of observation to such an extent that he has only to look at the patient to be able to tell what the trouble is; or treating symptoms as they arise, paying especial attention to the niceties of the profession, those with a goodly share of practical judgment may achieve reputation and success, but never will the depth of their knowledge allow them to have the courage of their convictions, to conscientiously treat medical and surgical cases, with due regard to the sins of omission as well as the sins of commission.

Far safer is the man and less likely is he to have unpleasant retrospection if in early life he avails himself of every method, of every procedure known to the profession, using his powers for thinking, reasoning, analyzing and deducing to make a diagnosis, or attempt to, even in a case of the simplest character. Should this diagnosis be wrong a lesson will have been well learned, and each lesson makes the better physician, the better surgeon.

In my own professional work nothing has been of more advantage to me than having received a local appointment as acting assistant surgeon in the Public Health and Marine Hospital service, and for the past four years treating the patients of the service. In all this work a diagnosis has to be made and put on record; no more terms of "a little biliousness," "gastric fever," "congestion of the bowels," etc., in the hurry of practice. A habit of satisfying your own mind at least of the nature of the disease in every case is certainly a good one to form. I am trying to cultivate it more and more all the time.

Surgery of to-day has reached heights never dreamed of a decade or two ago. The field is broadening all the time, and cases hitherto considered entirely in the medical class have now been transferred to that of the surgical, and the reason for this is the improvement in the art of diagnosis, that accurate knowledge which carries with it the ofttimes delicate distinction of knowing when and when not to operate.

Mechanical operative dexterity is an accomplishment possessed by many whose years in the profession have been but few; the really great surgeons are not only the dextrous, but rather the profound students of the human mechanism, those who have gone to the foundation and are most familiar with the etiology and pathology of disease, and have availed themselves of every method known to science to get an exact knowledge of the individual case. For I can but believe that the most essential quality in the successful surgeon is that of accurate diagnosis. For it ofttimes, beyond peradventure, designates the time for and against operative procedure, and the more proficient the surgeon can make himself in this most important branch of the science the less he will have cause for future regret, and the more he will be possessed of the "surgical conscience." Knowledge gives us confidence and boldness, too; and if tempered by the conservatism of wisdom we have the ideal man.

"Knowledge and wisdom, far from being one.
Have, ofttimes, no connection. Knowledge dwells
In heads replete with thoughts of other men:
Wisdom in minds attentive to their own.
Knowledge is proud that he has learnt so much;
Wisdom is humble, that he knows no more."

THE INFLUENCE OF THE GENERAL CONDITION OF THE PATIENT ON THE RESULT OF A SURGICAL OPERATION.

BY STUART McGUIRE, M.D.,
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There are some operations, such as for the relief of a strangulated hernia or the removal of a gangrenous appendix, which are so urgently demanded for the immediate purpose of saving life that the surgeon has no choice, and nothing is considered but the one great need. These are imperative operations, and must be done regardless of risk. There are other oprations, such as for the correction of deformities or the relief of some chronic ailment, which, however desirable, are not essential to the life of the patient. These are elective operations, and should not be undertaken without carefully considering the danger to be incurred on the one hand, and the benefit to be hoped for on the other.

In estimating the risk of an operation the modern surgeon is too apt to base his opinion on the statistics contained in text-books and encyclopedias. Figures are proverbially unreliable. Thus, for instance, the statistics of old operations, such as ligations and amputations, are usually a record of preantiseptic surgery, and do not represent the work of to-day. While the statistics of more recent operations, such as thyroidectomy or gastro-enterostomy, are usually the record of master workmen like Kocher and Mayo, and do not represent the danger of these operations in the hands of the average surgeon.

In deciding whether or not to advise a patient to undergo an elective operation the following factors should be considered:

First, the gravity of the operation and the relief to be expected from its successful issue. There is no operation devoid of risk, and some are attended by great danger. Patients

are occasionally unreasonable and insist on having a serious operation done to rid themselves of a fancied ailment. Unless the operation is safe and there is a reasonable assurance of the patient being materially benefited he should not be subjected to a surgical ordeal.

Second, the ability and experience of the operator. No courageous doctor should fail to undertake an operation if the patient's condition is urgent, if delay means death, and if no more experienced surgeon is available. Competency is a relative term, and the man on the ground should endeavor to afford relief or else fails to measure up to his responsibility. It is different, however, when the disease is a chronic one and the patient could safely be moved to a hospital, or await the arrival of a surgeon from a neighboring city. A patient is entitled to the best possible prospect for prolonged life or restored health that his resources permit. No conscientious surgeon should undertake an operation without asking himself whether he has the skill to do the work satisfactorily. In many cases he can honestly answer the question in the affirmative. In some cases, while there may be a doubt in his mind, he is justified in operating by the fact that the patient has not the physical strength to bear transportation or the financial means to bring a surgeon from a distance. In other cases, however, the surgeon must recognize his inferiority to men in the profession who devote their lives to special lines of work, and when the patient has the physical and pecuniary power to secure their services, it is his duty to place the case in their hands. This obligation is so universally recognized that the sacrifice it entails is not often appreciated by the laity, and sometimes not by the class of the profession which is benefited.

Third, the general condition of the patient, or the consideration of the personal factors in the individual case which influence the result of the operation. It is often said—sometimes seriously, sometimes satirically, and sometimes truly—that the operation was a success, but the patient died. In

such a case the indications for the operation may have been plain, but the contra-indications were either overlooked or disregarded. The operation may have completely corrected the condition from which the patient suffered, it may have been perfect in its technique and brilliant in its execution, but the patient may have lost his life from some complication which could have been foreseen by more careful preliminary investigation. Many surgeons have had uncontrollable hemorrhage to follow the removal of a small tumor, owing to the patient having hemophilia, or have had gangrene develop in a wound, owing to the existence of diabetes, or have had suppression of urine to follow, owing to the presence of nephritis.

Sir James Paget, in one of his classical lectures, says:

> Never decide upon an operation, even of a trivial kind, without first examining the patient as to the risk of his life. You should examine him with at least as much care as you would for life insurance. It is surely at least as important that a man should not die or suffer serious damage after an operation as that his life should be safely insured for a few hundred pounds.

Two separate and independent examinations should be made of every surgical patient: the first for the purpose of diagnosis and the determination of the condition to be corrected; and the second for the purpose of prognosis, or the determination of the safety of the operation. In forming an estimate of the latter, many factors have to be taken into consideration, such as age, sex, race, habits of life, constitutional diseases and visceral disorders. In discussing these under separate headings much use has been made of an article by Sir Frederick Treves, who acknowledges a similar indebtedness to Sir James Paget.

Age. As a general proposition it may be stated that patients at either extreme of life are poor subjects for surgery.

Children under five years of age take anesthetics badly; often suffer severe shock from only moderate loss of blood, and are difficult to manage during convalescence. They are liable to gastro-intestinal disturbances, especially in hot

weather, and frequently are the victims of chickenpox, measles or other infectious diseases to which they are susceptible. On the other hand, owing to the energetic cell activity of the period of growth, their tissues heal rapidly and are not prone to suppuration. In operating on children avoid, if possible, the period of first dentition, as they are liable to digestive disturbances and to convulsions, and apt to develop a high temperature under little provocation. Use chloroform as an anesthetic, and avoid the infliction of long-continued pain. Especial care should be taken to prevent loss of blood or body heat. Dressings should be carefully watched and changed as often as soiled. Usually no attempt should be made to keep the child in bed, but from the first it should be permitted to lie on the mother's lap or be carried about in her arms.

The period from the fifth to the fifteenth year is the golden age of surgery. Here the mortality is least and the results best from operations of almost every kind. This is due to the fact that metabolic processes are active and resistance to infection vigorous; that the various organs of the body are normal and perform their functions satisfactorily; that the nervous system is stable and uninfluenced by regrets for the past or fears for the future; and finally, that the reason and will have developed sufficiently for the surgeon to secure the acquiescence and cooperation of the patient.

Between the twentieth and fortieth years the mortality of operations greatly increases. This is due to sexual development, attended by the possibility of excesses, abnormalities and diseases; also to the cares and responsibilities of maturity, often leading to neurasthenia from excessive work and worry. And finally, there may be superadded the injurious results of addiction to tobacco, whiskey or opium.

After forty the mortality from operations is nearly three times greater than in patients under twenty. As a rule, old people are severely shocked by loss of blood or body heat; their wounds heal slowly, and their tissues have little power to resist infection. They are headstrong and rebellious and

intolerant to confinement. Their organs of assimilation and excretion are impaired, and their stomachs and kidneys liable to break down. Taken all in all, old age is a greater bar to surgery than any other complication, unless it be chronic alcoholism. It must be remembered, however, that senility is not measured in years. Surgically speaking a man is as old as his arteries. In impressing this point Sir James Paget says:

> They that are fat and bloated, flabby of texture, torpid, wheezy and incapable of exercise, looking older than their years, are very bad.
>
> They that are fat, florid and plethoric, firm-skinned and with good muscular power, clear-headed and willing to work like younger men, are not, indeed, good subjects for operations, but they are scarcely bad.
>
> The old people that are thin and dry and tough, clear-voiced and bright-eyed, with good stomachs and strong wills, muscular and active, are not bad: they bear all but the largest operations very well.

The brilliant results of Young and others in operating on old men for prostatic enlargement show that modern surgery, with its short period of anesthesia, diminished loss of blood, freedom from infection and provision for adequate drainage has made it safe to do operations on the aged which, only a short time ago, would have been unjustifiable.

Sex. Other things being equal, women bear operations better than men. This is due to the fact that they are designed for maternity and are naturally endowed with more passive endurance; that they are more confiding and trustful, and place greater confidence in the assurances of the surgeon; that they are more tolerant to confinement to bed, because they are not accustomed to active outdoor life; and finally, they are more temperate and regular in their lives, and not as frequently the victim of excesses in food and drink.

On the other hand, menstruation, pregnancy, lactation and the phenomena of the menopause give to the sex the possibility of complications to which the male is not subject. As a rule operations should be avoided during menstruation, as the period is frequently attended with nervous and digestive disturbances. The time of election, especially in gynecologi-

cal work, is the two weeks midway between the completion of one period and beginning of the next. In emergencies, however, an operation may be done during menstruation without misgivings, as usually no ill effects result.

It is also undesirable to do an operation during pregnancy, as it entails the possibility of miscarriage. The danger is more theoretical than real, however, as hundreds of abdominal sections have been done on pregnant women for appendicitis or other abdominal diseases without interference with gestation.

It is also inadvisable to operate during lactation, because the woman's strength and resistance are below par; and if she continues to nurse the child she will have an undue tax upon her, while if she ceases to do so there will be the danger of trouble with her breast.

Race. The influence of race on the result of an operation is a question of interest, but not of great practical value. It is stated that a Chinaman makes the best patient on earth. In America, especially in the Southern States, there is good opportunity to contrast the respective resistance of the Caucasian and the negro. Surgeons of large experience in operating on both races are practically unanimous in the opinion that the black man is a better subject than the white man. This does not apply to the mulatto, for he follows the rule of the mongrel, and has the vices of both parents and the virtues of neither. It is obvious, even in the life of an individual, that the pure negro is losing the immunity formerly enjoyed to certain diseases, and is developing predispositions which render him a less favorable subject for operation. Before the Civil War insanity was unknown in the race; tuberculosis was not common, and venereal diseases of rare occurrence. With civilization, education and syphilization he is now the victim of various nervous disorders; with unhygienic surroundings and scant clothing he is a frequent victim of the great white plague; and with improper food, eaten at irregular intervals; his digestion has become impaired, and he is

suffering more and more frequently from gall-stones, appendicitis and diseases of the kidneys. The day will come when the degeneration of the whole race will have reached a point to make it an accepted fact that they are poor subjects for surgical work.

Vigor and Weakness. Paradoxical as it may sound, the strong, robust man frequently does not make as good a surgical patient as one who is feeble and wasted by disease. He may have huge limbs and mighty strength; he may never have had an illness in his life, and boast of the constitution of an ox, but he is a poor subject for the surgeon's knife. He is accustomed to fresh air and an active life; his blood vessels are full and oxygenation of the tissues is rapid. His food has been large in quantity and gross in quality. When misfortune overtakes him there is no time to accommodate himself to new conditions, and the whole habit of his life is suddenly changed. To this is added the shock of his accident, the horror of an operation and the dread of the future. Just the contrary is true with the chronic invalid who has been acclimated to bed-life by long weeks of invalidism, whose circulation, respiration and digestion have become adjusted to his condition, and who has been brought to view the approaching operation as a means of relief of pain and restoration to health. Of the two types described the latter will be well first.

Obesity. As a rule a fat patient is a bad patient. If the obesity is hereditary and the general health good, it is not as bad as when the fat is due to gluttony, indolence or beer-drinking. An obese patient is an elephant on your hands. He usually breathes with difficulty and can not assume a recumbent position. It is hard to move him in bed and difficult to prevent the formation of bed-sores. The skin is usually thin from pressure, and its edges difficult to approximate. The subcutaneous fat has little vitality and readily breaks down and liquifies. Infection once taking place, pus burrows far

and wide, and is drained with great difficulty. Sometimes such patients die suddenly from fat embolism; again they become exhausted and prove an easy victim to intercurrent diseases. If recovery takes place, convalescence is always tedious and prolonged.

Alcoholism. The most unpromising patient who ever comes to a surgeon is the chronic alcoholic. Constant drinkers who are never drunk, and yet who are never sober, are worse subjects than those who get on periodic sprees. The gravity of the risk in the individual case will depend on the length of time the individual has taken stimulant; the average amount consumed daily; the presence or absence of tremor of the hand or alteration of the knee-jerk; the existence of gastritis, as indicated by anorexia, nausea or vomiting; and the condition of the liver, kidneys, heart and blood vessels. No operation except the most imperative should be done on the alcoholic, because of the danger of the administration of the anesthetic, because of the depraved condition of the tissues and consequent lack of resistance to infection, because of the liability of the kidneys to stall or the heart to run away, and because of the danger of the development of wild and uncontrollable delirium. When an operation is unavoidable, but not immediately necessary, the patient should be prepared for it by cutting down or withdrawing the stimulant. When an immediate operation is necessary it is better to continue the alcohol until the period of greatest danger is past.

Affections of the Nervous System. Hysterical patients usually give a great deal of trouble before the operation, but do very well after the ordeal is over. A nervous woman who wishes to tell of the unfortunate surgical experience of her friends, who desires to discuss every step and detail of her own operation and tell how she wishes her case managed, and who is possessed of exaggerated fears as to the complications which may develop or the ultimate result which may follow, usually, after the operation, becomes a model patient. Her imagination enters upon fresh fields and she becomes hopeful

and courageous, and at once begins to plan a new life of activity.

The neurasthenic, however, is a different proposition, and woe betide the incautious surgeon who operates on one. Occasionally neurasthenia may be due to chronic appendicitis, uterine displacement or some other cause which can be corrected, and the patient cured. But in a large majority of cases the neurasthenia is due to a disturbance of the general body nutrition, and no operation will prove of benefit. The victim of neurasthenia wears out the patience of his family and friends, and in order to secure a sympathetic listener, and in order to demonstrate to the community the serious nature of his disease, he goes from surgeon to surgeon and from hospital to hospital, offering himself as a bloody sacrifice to his curious form of egotism and glorying in his martyrdom. Surgery does this class of patients no good, but simply deepens rather than relieves the neurasthenia.

The insane are usually good subjects for surgical operation. The regular life of an asylum is conducive to good health, and the absence of mental anxiety on the part of the patient is a favorable factor. Mayo, who has done a great deal of work on this class of cases, states that they are entitled to just the same surgical treatment as the sane; no more, no less. In other words, insane people should be operated on to relieve them of hernia, gall-stones and abdominal tumors; but hernia, gall-stones and abdominal tumors should not be operated on to cure the patient of insanity.

Constitutional Diseases.

Rickets is a condition of bony malnutrition. If the general health is good, wounds heal as well in rickety subjects as in other cases.

Syphilis does not usually increase the risk of a surgical operation. Wounds made during the full bloom and blossom of the secondary stage heal kindly, and operations done on tertiary lesions usually do well. The danger in operating in

the early stages of syphilis is rather one to the surgeon than to the patient, as the blood is infectious.

Gout has no effect upon the result of an operation, unless it has existed sufficiently long to produce cardiac or renal changes. It is, of course, not wise to operate during an acute attack of the disease, and it must also be remembered that an operation sometimes precipitates an attack in a person predisposed to the disease.

Hemophilia contra-indicates a surgical operation, unless urgent and required to save life. Fortunately the subjects of hemophilia do not always bleed. A case is in mind where a man was brought to the hospital with gangrenous appendicitis, who gave a history of having suffered repeatedly from almost fatal hemorrhage after trivial injuries. After consultation, a section was determined on, and was performed with less than the usual loss of blood.

Malaria and an injury or operation have a reciprocal relation one with the other. Malaria may cause pain, hemorrhage or inflammatory changes at the site of injury, which assume an intermittent type and yield to administration of quinine. Again, an injury or operation inflicted on a person the victim of malaria may markedly aggravate the disease, or induce a fresh onset of ague; or again, it will make active symptoms in a person who is not known to be infected.

Diabetes is an almost positive contra-indication to an operation, as the tissues of a diabetic patient possess little power of regeneration, and have so little resistance to infection that inflammation, suppuration and gangrene are almost certain to develop. Surgery on diabetics should only be done when most imperatively demanded, as often when the sugar in the urine has been decreased to an insignificant amount by weeks of dietetic treatment, it will reappear in large quantities immediately after the operation, and the patient die in diabetic coma.

Visceral Disorders—Cardiac and Valvular Diseases.

Valvular disease of the heart is believed by the laity and by most of the profession to add greatly to the risk of the anesthetic and to the danger of death from complications following the operation. This does not seem substantiated by facts, as but a small proportion of the patients who die from chloroform or ether are found to have been the victim of organic heart disease, and as far as convalescence after the operation goes, patients with heart trouble are usually markedly improved by the enforced rest and confinement to bed. A dilated or fatty heart is much more to be feared than one with valvular lesion, especially if there be adequate compensation.

Atheroma of the arteries was formerly thought to predispose to secondary hemorrhage, but in modern practice this complication is rarely, if ever, seen. The complication to be most dreaded from disease of the arteries is gangrene, due to lack of nutrition of the tissues to which they are distributed.

Renal Diseases.

It was formerly thought that the presence of albumin or casts in the urine indicated grave organic change in the kidney, and was a bar to surgery. This may have been the case with the crude tests of the older pathologists, but it is certainly not so to-day, for the modern laboratory man finds albumin and casts in practically every specimen submitted to him. Dr. Osler has emphasized this in a recent article entitled, "The Advantages of Having a Few Casts in the Urine After a Man Reaches Sixty Years of Age." Certain forms of nephritis, however, add greatly to the danger of an operation, and all surgeons occasionally lose patients from suppression of urine, followed by uræmic convulsions. No operation of election should be done on a patient suffering with advanced Bright's disease, and when the urgency of the case is such that an operation has to be done, the patient should be carefully prepared by dietetic and eliminative treatment

before the operation, and the kidneys kept active afterwards by the use of spartein and the administration of large quantities of water by mouth or rectum.

Respiratory Tract.

Bronchitis, pneumonitis and phthisis pulmonalis are serious bars to surgery, inasmuch as they make the administration of the anesthetic difficult and dangerous, and complicate the after-treatment by coughing, embarrassed breathing and imperfect oxygenation. In acute inflammation of the lungs, operations should be postponed, and in chronic trouble, they should not be done except to meet most urgent indications.

Alimentary Tract.

Gastric dyspepsia, intestinal indigestion, diarrhœa and constipation are all conditions to be corrected prior to an operation. The prognosis is bad when to the toxins of disease is added the poison produced by putrefaction of gastric and intestinal contents. In correcting the conditions named, food should be sterilized, the mouth should be repeatedly disinfected, the stomach should be washed out, and intestinal antiseptics, together with purgatives, should be judiciously administered.

In diseases of the liver, especially when the patient is jaundiced, the danger of hemorrhage should be determined by testing the coagulability of the blood, and, except in cases of greatest urgency, operations should be postponed until the cholemia subsides or until, by the administration of calcium chloride or other drug, the danger of uncontrollable bleeding be removed.

Diseases of the Blood.

Anæmia, or a deficiency of either hemoglobin or red blood cells, is often a contra-indication to an operation. Mikulicz states that a hemoglobin percentage below thirty, or a red blood count below 3,500,000 should postpone operative intervention until the blood is enriched by medical treatment.

While this is a safe rule to follow, it has its exceptions. The lives of two women have recently been saved, whose blood findings were below this minimum owing to profuse and uncontrollable uterine hemorrhage, by the operation of hysterectomy.

Leucocytosis, or increase in the polymorphonuclear leucocytes, especially when progressive, indicates advancing suppuration and demands early operation.

Leucocythemia, or an excess of mononuclear leucocytes, contra-indicates all operations, as the patients invariably die after removal of the spleen, and stand in great peril after more trivial procedures from hemorrhage, infection and other complications.

A PLEA FOR EARLY OPERATION IN APPENDICITIS WHERE THE DIAGNOSIS IS OBSCURE.

BY J. F. HIGHSMITH, M.D.,
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All will admit the importance of operating early in typical cases of appendicitis. No one will contend that it would be wise to delay in typical cases. But the class of case which I hope to bring before your minds now are those where the surgery is obscure, we underrate the gravity of the case and our mistakes prove fatal.

This is a subject which has been discussed pro and con for several years past, but is one that never grows old to the abdominal surgeon. At the present time to open the abdominal cavity with proper surroundings is free from danger. The dangers arising from the conditions found of the internal organs and their subsequent treatment, and not from the exploratory incision. Not to explore is to remain in absolute ignorance of the true conditions that exist within the abdominal cavity. Not knowing it is absolutely impossible to give our patient that scientific treatment or that common-sense treatment which is so simple once the true nature and cause of the existing disease has been accurately diagnosed—the old adage ever holding true: "He who diagnoses well, cures well."

As I have previously stated, all admit the importance of operating early when the diagnosis is clear, and the importance of applying surgery as the remedy in these cases. I am glad we can say this tendency to operate early has wonderfully advanced in the last few years. Until recently appendicitis was divided into medical cases and surgical, while to-day it is looked on by the greater majority of the profession as being a surgical disease, and the sooner the remedy is intelligently applied the better. The average general practitioner has no hesitancy in recommending an appendectomy where

the diagnosis is clear, but where the diagnosis is obscure he many times postpones until it is too late, and that awful enemy, "infection," has established itself and we are at its mercy to do the best we can for our patient.

I could not go without saying the same holds true in gall-bladder surgery, peritoneal tuberculosis, intestinal perforation in typhoid, surgery of the stomach and pancreas. For in these as in all other surgical diseases of the internal viscera, a favorable mortality is established by early diagnosis and prompt surgery. And to diagnose accurately the key-note is EXPLORATION. Exploration rendered harmless by our co-laborers in the past. We can but rejoice in the behalf of surgery as a science which had made no profound impression upon the world until about a century ago. Such men as Morton, Simpson, Lister, Simms, Gross, and many others too numerous to mention, must not be forgotten. From such mighty leaders we can but reap full sheaves to reward us in the battle which we are continuing for suffering humanity and against disease.

The possibility of abdominal surgery rendered safe by antiseptics and improved technique to relieve many obscure cases of intra-abdominal disease ranks foremost to-day. This all admit, but at the same time we must urge that delay is dangerous; "a stitch in time saves nine."

It is a common practice of text-books to describe a prevailing type or typical form of the disease, and if a case always followed the type described in the text-book then mistakes would seldom be made; diagnosis would be a matter of no difficulty. Typical cases are common, it is true, but atypical cases are also common. This is especially true in appendicitis. The masked cases of appendicitis are many times the dangerous cases. For especially in this class of cases the attending physician is not sure of his diagnosis and hopes that the case may get better on expectant treatment.

It is only necessary to call to our minds the results of un-

recognized cases such as appendiceal abscesses, gangrenous appendix, diffuse peritonitis and metastatic infection, to realize that too high a price has been paid for delay in operating.

Very few practitioners will fail to advise operating in cases accompanied by violent pain about McBurney's point, rigidity of right rectus, persistent vomiting and fever. But many times it is more dangerous to wait in certain cases in which the physician thinks he is dealing with a very mild type of the disease, if it exists at all. These doubtful cases are dangerous. Yes, with a temperature of 99 and pulse 80 the condition may be alarming. As examples I briefly cite a few cases from 200 appendectomies performed for different types of the disease.

First, I cite a case where the subjective symptoms were mild, the pulse and temperature were both low. Mr. A came to my office complaining of pain in right side of abdomen. He had been suffering from constipation and indigestion for some time. There was no marked spasm of the muscles, no increasing temperature, no exhilarated pulse. This patient was given repeated doses of Epsom salts until the bowels were freely moved. The second day the patient was in bed. The bowels had moved freely, but still there was no rigidity, but slight tenderness and with a temperature of 99 1-2. No food was given by the stomach, the patient was kept absolutely quiet in bed awaiting developments. On the evening of the second day the patient had a chill with a temperature of 103 following. An operation was at once advised. It revealed a gangrenous appendix, which was removed without being ruptured. The case drained for twenty-four hours and made an uneventful recovery.

The second case was that of a mill man. On January 14th he was well and attending to his duties. At 11 o'clock a. m. he had a pain in his abdomen; at 12 o'clock he had a slight headache. His bowels moved and the pain disappeared. Pressure over the region of the appendix caused nausea. On his own account he took a dose of salts at 2 p. m.

and went to bed and sent for his physician. There was no rigidity of the rectus. The physician called detected no symptoms of appendicitis, but thought as soon as his bowels had moved that this abdominal pain would disappear. At 8 o'clock p. m. his temperature was 98 6-10 and the pulse 100. On the morning of the 16th at 11 o'clock his bowels had moved well from the salts, his pulse was 115 and his temperature 99; slight rigidity with some pain in the ileocæcal region. Six months prior to this the patient had had a similar attack which was diagnosed appendicitis. With this history on the evening of the second day, twenty-four to thirty-six hours from the first symptom, an operation was advised and revealed an appendix perforated at the tip with pus in the peritoneal cavity. This patient was kept in the Fowler position, drained, and, after being extremely sick, recovered.

The third case was that of a drug store clerk, who was seen about two weeks after he had returned from a camping expedition. He was complaining from digestive disturbances, which you would think but natural. At 3 o'clock that afternoon he complained of general abdominal pain, but was not severe. The pulse was 90 and the temperature 99, for as long as he remained quiet there was no pain, but if he moved himself he suffered considerably. On the morning of the second day his temperature was 100 and pulse 100, with a very slight rigidity and some tenderness over the appendiceal region. Operation revealed an inflamed appendix with a gangrenous tip.

Another case similar: My own son, a schoolboy, age sixteen, for some weeks previous had been complaining of indigestion, general lassitude, eyes giving him trouble, and it was with difficulty he could apply himself to his studies, becoming tired so easily. Saturday he was bright as usual, playing around home, and was indiscreet as to his diet. Sunday morning he remained home, did not go to Sunday School, complaining of cramplike pains all through his abdomen. Thinking this was due to the cocoanut candy he had eaten

the day before, I directed him to take a dose of Epsom salts, this to be repeated every two hours until bowels moved freely, thinking but lightly of his condition. The salts acted well, but Sunday night he did not rest but complained of nausea off and on during the night. Monday morning he was suffering no pain, but would have occasional vomiting spells, and I thought I could detect a very slight rigidity over the region of the appendix, and he would be nauseated after pressure over the appendix.

When he was eight years old he had what I thought was a mild attack of appendicitis. I might state that up to this time he had had no fever and no marked increase in the pulse rate. But with his previous history I was suspicious of appendicitis. At 2 o'clock p. m. on Monday his temperature was 99 and pulse 100; pain had increased all over his bowels, but more marked over the appendix. At 8 o'clock in the afternoon temperature 100, pulse 110. At 10 p. m. he had a marked chill and his temperature jumped to 104. I operated at once. I found a large gangrenous appendix, giving the appearance of a bologna sausage at the tip, just ready to rupture. This was removed without rupturing, and drained for forty-eight hours. He was very sick for four days, having great trouble to get his bowels to move, but after this had a rapid recovery. Since then he has gained in strength and is now a strong boy.

The fifth case, Mr. S, a merchant. Two weeks before he consulted me he was in bed and under the care of his physician for three days when he, to all appearances, was quite himself again. No fever, and but for a slight soreness and a feeling of weight in his right side claimed he was all right. His temperature was normal, also his pulse. His bowels moved well. Gave a history of having had similar attacks before with loss of weight, bad digestion, etc. An operation revealed a highly inflamed appendix about which there was an ounce or more of pus.

A few days later another case, a farmer, came under my

care, suffering identically the same; and on operation the same conditions were found. And following this was a third case of the same type. These cases were all drained and all recovered. Abscesses had walled themselves off, the patients had no fever and to all appearances, except some soreness in the region of McBurney's point, all symptoms were negative.

Still another case, a merchant, age 30, was referred to me. Gave a history of having had several attacks of appendicitis, as they thought. When he would have attacks a mass would form in his side then would disappear. This patient, a very intelligent man, claimed the pus from this abscess ruptured into his bowels. He was sent to me about the time he was getting over one of these attacks. He had no fever, very little tenderness in his right side, bowels regular, but showed from his general expression a state of sepsis and that he was suffering. I kept him under watch for a few days and he consented to an operation. The operation revealed the fact that he had a large abscess of the appendix, the appendix dilated, and when this had gone its limit in some way it ruptured back into the head of the cæcum, and in that way drained the abscess cavity. When there was any interference with this drainage chilly sensations would come on and he would have all symptoms of a general septic condition, due to something he knew not what. This condition had been due to an appendiceal abscess which had been drained into the cæcum, thereby saving the patient's life. This patient recovered after the operation.

Another patient, a young schoolgirl eighteen years old, had certain articles of food to disagree with her for some time and had to be careful about her diet. Pain and tenderness were not extreme nor were they felt in any one spot. This type of case is the most frequent one of masked appendicitis.

This class of cases are the ones that furnish the mortality from appendicitis. No one can tell of the real condition of the appendix except from inspection, and a great per cent of the cases that we do operate on are pus or gangrenous. I

would urge in cases of this kind to be on the safe side and operate within twelve hours from the beginning of an attack.

From these cases which I have reported with no deaths it would seem that all my cases get well. Let me correct this impression and say that with this type of case in early operation I have been very fortunate and have lost no case, but when my cases had gone into general sepsis, ruptured appendix, bowel paresis and general peritonitis I have lost my share.

What I have said is nothing new. It is an old story to us all, but I hope that it may impress some one as I, myself, have been impressed with the obscure and treacherous disease, and thereby save some life which would otherwise have been lost.

A FEW RECENT UNIQUE SURGICAL CASES.

BY JOSEPH GRAHAM, M.D.,
Surgeon Watts Hospital, Durham, N. C.

Not having the necessary time to prepare a paper on a surgical subject, and wishing to show my interest in the Society, I decided to present a few unusual cases that have occurred in my practice since the last meeting:

Case No. 1.—Excision of three feet of the ileum and all of the cæcum and ascending colon.

Fay W., aged eleven years. Patient of Dr. E. A. Abernethy. Admitted to Watts Hospital May, 1908. Diagnosis, appendiceal abscess. After a thorough examination I agreed in the diagnosis.

History.—Four days previously sudden pain in abdomen followed by nausea and vomiting. Pain localized over appendix area. Marked localized tenderness and rigidity. Localized area of dullness on percussion. Rectal examination detected a mass in ileocæcal region. Temperature 102 2-5. Pulse 130.

Previous History.—Had four attacks of colic in past two and one-half years. The last two had been followed by nausea and vomiting, localized soreness and confined him to bed for a few days.

Operation.—Incision one and one-half inches through right rectus. Examining finger detected the appendix. This was elevated and removed. Examination showed acute inflammation but no pus. Then examined to ascertain the cause of the mass we had detected. Found a growth involving the cæcum and ileum. Therefore I enlarged the short incision into an eight-inch incision. Examination showed a growth in the ileum, cæcum and ascending colon, with marked enlargement of the ileocæcal glands. Some of these glands were as large as hickory nuts. We decided that it was possible to remove the growth and performed a resection of ileum, cæcum and all of ascending colon. The wide involvement

of the mesenteric glands required removal of so much mesentery that it was necessary to resect an additional foot of the ileum so as to secure healthy bowel for the anastomoses. There was no escape of fæcal matter, rubber-covered clamps being used for coprostasis. The bowel reeds were inverted and a lateral anastomosis by needle and thread was made between lower end of ileum and transverse colon. The total length of removed bowel measured four feet, four inches. Fearing some local infection I drained area of anastomoses by a cigarete drain. Inserted a glass drain to bottom of pelvis, and on account of shock filled the lower abdomen with salt solution. The wound was closed by continuous catgut suture of peritoneum and interrupted A. W. G. sutures. The patient was placed in the exaggerated Fowler position. His convalescence has been without incident. Examination of the removed strictures shows a tumor involvement of the ileum, cæcum and ascending colon. The enlarged ileocæcal glands contained pus. There were no tubercles on the surface of the peritoneum, and no ulcers were found in the bowel. The specimen was sent to a pathologist, and we will have his report at an early date. For successful issue in this case I am deeply indebted to Drs. C. A. Hicks, R. L. Felts and C. A. Woodard who gave me very able assistance.

Case No. 2.—Gangrenous kidney; trans-peritoneal nephrectomy. Recovery. Report of Dr. E. A. Abernethy.

Ula L., thirteen years old. Birth normal. Childhood without special incident. No disease bearing on condition under consideration.

Present History.—About one year ago patient was brought to me suffering with what I thought to be the beginning of menstruation. Complained of headaches, backaches and indefinitely located pains in the "stomach." These "spells" came on at periods about four weeks apart and lasted several days. Since the present conditions have developed the mother says there were pains that might have been referrrd to the kidneys. I do not remember anything that led me to suspect

kidney involvement. As the child was well developed and approaching the age when menstruation should begin I diagnosticated the trouble as an effort to establish this function. Iron, arsenic, and manganese, together with proper hygienic measures were prescribed. This treatment was continued over a period of months, and the menstrual function with some irregularities was established, and I lost sight of the patient.

On June 3, 1907, was called to see her. Learned that four days before while in apparent good health she had, when arising in the morning, complained of pain in right side of abdomen just above crest of ileum. This pain had become worse and had gradually extended over most of right abdominal region.

On examination.—Patient lying on back with right thigh flexed, expression indicating severe period. Temperature 104, pulse about 140, running, and of poor volume. Muscles on right side of abdomen rigid; entire right side of abdomen tender, with marked tenderness over McBurney's point. An area of dullness around region of appendix several inches across. Bowels had been thoroughly moved before I saw patient. Kidneys, as far as I could learn, were doing their work normally. No examination of urine was made.

A diagnosis of acute appendicitis with rupture was made, and owing to the apparent desperate condition of the patient she was immediately sent to the Watts Hospital at Durham, a distance of twenty miles, where she was placed in the care of Dr. Joseph Graham.

On July 13th the patient was returned to my care, and at this writing, July 30, 1907, her wounds have so nicely progressed that her mother is now dressing them. The patient is in better health than she has enjoyed in the past year, eating what she wants, going where she pleases, suffering no pain and apparently not inconvenienced by the loss of her right kidney.

Condition on admission to Watts Hospital.—A well-developed girl, aged thirteen. Ula L. Facial expression shows great pain.

History.—Four days before developed sudden pain in right iliac fossa near umbilicus. Pain gradually grew worse and was followed by nausea and vomiting. Pain was localized in right iliac region. Pain was much relieved during night of second day, but returned on the third day and was more severe and continuous, followed by return of nausea and vomiting. Vomiting was repeated after admission to the hospital. No movement of the bowels for two days. Purgatives had been repeatedly administered by the family before calling Dr. Abernethy. Nothing could be elicited as to previous history, as patient was suffering extremely and father knew little of her history.

Examination.—Temperature 104, pulse 146, respiration 26-30. Patient located pain directly over McBurney's point. Palpation reveals marked rigidity of entire right side of abdomen and some slight general tenderness, more pronounced over McBurney's point. No tenderness in lumbar region or over gall bladder. Percussion revealed an area of dullness in right iliac. No irritability of bladder; specimen of urine obtained by catheter revealed normal sp. gr. and no albumin. Leucocyte count was not made. Rectal examination revealed tenderness in right iliac.

Diagnosis.—Appendicitis, perforation, abscess.

Operation.—Right rectus (Deaver) incision.

On opening abdomen found omentum adherent in right iliac fossa to colon and parietal peritoneum. Working carefully through a coffer dam of gauze a perfectly normal appendix was found and removed; then sought for the trouble causing adhesions.

Pelvic organs normal. Right kidney could not be found; carried finger up and palpated gall bladder, which was apparently normal. As finger came away from gall bladder a hard, slightly movable mass was detected. Enlarged incision

and separated omentum from colon, packed colon to inner side of wound. Then found a hard mass behind the messe-colon, the shape of the kidney, but approximately twice as large. Carefully protecting the abdominal contents with gauze diaphragms, an incision was made through the outer edge of messe-colon. A black, enlarged kidney came into view. Deciding to do a nephrectomy, we elevated the kidney and found the pelvis of the kidney and upper end of ureter to be distended with fluid. Expecting pus, carefully protected and then ligated pedicle and clamped between kidney and ligature. Then cut between clamp and ligature, dropping the ligated stump of pedicle and lifting out the kidney. As the pedicle dropped back it bled profusely. The ligature had cut the pedicle. Retied the artery and hemorrhage was completely controlled. There was a twist in the ureter a few inches below ligature, but no calculus. Then packed the cavity with gauze, which was covered over with the messe-colon, and the incision in messe-colon sutured with catgut. Removed gauze protectives, adjusted intestines and closed abdomen without drainage. Then made incision in lumbar region and brought out end of gauze which had been previously packed in cavity for drainage. Patient was considerably shocked, but promptly rallied.

Examination of removed kidney revealed a very much enlarged organ, very black in color. Incision revealed no pus or stone. The kidney was friable and could be broken and torn with the fingers by very slight effort.

Post-operative history.—With the exception of slight mural abscess recovery was uneventful. The girl soon rallied from the shock. Temperature and pulse returned to normal. No nausea, vomiting or obstructive symptoms. Daily examination of urine showed quantity above the average, comparatively low sp. gr., and at no time did examination reveal albumin, blood or casts. She had no headache and no disturbance of vision.

November 1, 1907. The patient is apparently in perfect health.

For successful issue in this case I am very much indebted to Dr. C. A. Adams, who gave very able assistance, and to Dr. Will Holt, who administered the ether so successfully that we were able to finish this long, tedious operation with a living patient, although she went on the table in a desperate condition.

Case No. 3.—Ovarian cyst; twisted pedicle; gangrene rupture. Recovery.

Ella M., age thirty-two. Single. Patient of Dr. C. A. Adams.

History.—Few days previously seized with sudden pain in right side of lower abdomen, followed by nausea, vomiting, distention and obstipation.

Examination.—Marked distention of the abdomen. Palpation, marked rigidity, especially over lower abdomen; percussion, dullness over lower abdomen corresponding to a six months pregnancy. Vaginal examination, patient menstruating; cervix not enlarged; uterus seems to go backward toward rectum; bimanual examination detects elastic fluctuation; rectal examination detects the retroverted uterus and the finger can be carried above fundus and bimanual examination gives definite elastic fluctuation.

Diagnosis.—Ovarian cyst, twisted on its pedicle.

Immediate operation advised and declined. Thirty-six hours later I learned that patient had grown much worse, was on way to hospital and desired immediate operation. Examination on admission to hospital revealed an enormously distended abdomen with planklike rigidity, continuous vomiting and complete obstipation. Temperature 103 2-5, and pulse 160. I washed out stomach and prepared for operation. On opening abdomen through a twelve-inch incision I found an ovarian cyst, the pedicle twisted three times over; the walls of the cyst had become gangrenous and ruptured. We ligated pedicle, excised cyst, and then removed a portion of the cystic fluid. A glass tube was inserted to bottom of pelvis and the abdomen closed. The patient was placed in the ex-

aggerated Fowler position and received the continuous low pressure N. S. enema.

Convalescence was without incident.

I am indebted to Dr. C. A. Adams for referring this interesting case and for very able assistance in the operation.

Case No. 12.—Left-sided appendicitis; acute diffuse suppurative peritonitis.

Willie F., age twelve. Patient of Dr. R. E. Nichols.

History.—Four days previously seized with pain in abdomen, followed by nausea and vomiting; pain was localized over left iliac region two inches below and two inches to the left of navel. As his condition grew worse I was called by Dr. Nichols to operate at the patient's home. Examination revealed extreme distention of the abdomen with marked rigidity. There was general tenderness, more marked on the left side at a point corresponding to the McBurney point. Rectal examination did not reveal any tumor. The child was extremely ill; temperature 102 1-2 and pulse 160. Vomiting, and no result from enemata. We made a diagnosis of acute peritonitis and probably left-sided appendicitis. The operation was performed outdoors under the trees. I opened the abdomen in the median line and a large quantity of pus escaped. There were a few adhesions but no real abscess wall. The appendix was found extended obliquely directly across the abdomen. It was abnormally long, being attached to the ligmoid flexure. The appendix had perforated near the tip. We removed the appendix, applied a cigarette drain to the appendix area and a long glass tube to the bottom of the pelvis. The patient was placed in the exaggerated Fowler position and received the continuous low pressure H. S. enema. Although desperately ill the patient made an uninterrupted operative recovery and is now in hospital.

I am deeply indebted to Dr. R. E. Nichols and Dr. C. A. Hicks for very efficient aid in operating on this case.

Case No. 6.—Depressed fracture of skull and rupture of meningeal artery.

Negro boy, "Bumpie," age 14. Patient of Drs. Moore, Shepard and Warren.

I was called in consultation to Lincoln Hospital.

History.—Four hours previously the boy was struck by a hickory stick over left eye and had fallen unconscious. Consciousness had not returned. There was a ragged wound one and one-half inches through skin over the left eye and extending into nose. Everything being in readiness I began immediate operation. I turned down a flap about three and one-half inches wide. I found a depressed fracture of the frontal bone, which extended into orbit and nasal cavity. Plugging this nasal wound I examined the depression and removed a depressed piece of bone three-fourths by one-fourth. Examining the inner table I found it punctured. On further examination I detected and removed five splinters of bone from the left frontal bone. Suspecting a possible lesion of the meningeal artery, I passed in a small curette and removed a little clotted blood, which was followed up by a profuse flow of bright red blood. I immediately opened skull, found bleeding vessel and ligated it. The wound was drained by a strip of rubber tissue and closed. Convalescence was without special incident. The boy has no disturbance of sight or smell, no headache and no nervous symptoms. His recovery is perfect.

SOME PRACTICAL POINTS IN THE MANAGEMENT OF INGUINAL HERNIA.

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The most common of all accidents which befall humanity is some form of hernia.

About one in every twenty or thirty people born are at some period of life so affected. Sex seems to exercise a controlling influence and we find in men about one in 14.9 have some form of hernia, while in women the proportion is thought to be one in 44.7 persons. Of the whole number afflicted with hernia about eighty-four in every hundred suffer from inguinal hernia, and at least one-seventh of all cases of inguinal hernia, seen for the first time, are in children under one year of age. Indeed, the majority of cases of hernia occur before middle age, and the largest number during the first ten years of life (Kingdon).

This is almost entirely due to the persistence of the processus vaginalis. Francke tells us that in his operations for oblique inguinal hernia he found a congenital sac in 28.6 per cent of his cases; Beresowsky found congenital sac in 35 per cent; and Wood, operating on 370 cases of inguinal hernia, found congenital sac in 33.3 per cent. Later writers make the percentage larger still. Add to this the nearness together of the abdominal rings in infancy and the frequent increase of abdominal pressure due to crying, straining at stool, straining in micturition due to phimosis, and it is easy to see why inguinal hernia is relatively frequent in the very young. Nature makes every effort to overcome these conditions. The tendency is always to obliteration of the vaginal process, and the gradual widening of the pelvis during the continuance of development brings the abdominal rings wider apart so that weak points are not so closely opposed. In this way many times the inguinal hernia of infants is cured, and with these

natural adjuvants to the treatment a little aid on the part of the physician will cure most of the hernias of early childhood. In my experience, however, very few physicians pay any very great attention to these cases. Advice to keep the bowels open and reference to a druggist for a truss is usually all that is done, and such advice is woefully insufficient. Great attention must be paid to the nutrition of the child, for the development of the muscles and even the distribution of fat contributes toward the cure. Constitpation must be relieved, and if phimosis be present it must be removed. Next, the mother must be instructed as to how she can keep the hernia from coming down, and for this purpose nothing could be more unsatisfactory than the trusses found in the shops. Trusses can rarely be made to fit a baby with comfort; they can seldom be kept in place, and the hernia frequently coming down the effect of the treatment is lost; they are dirty and expensive, for if we resort to trusses several must be provided in order that one may always be ready for use; and by no means the least objection is that they frequently excoriate the tender parts and must be abandoned.

What I have used for years to hold the hernia up is the simple hank of yarn; and though I am aware there is nothing new about it, I am sure its usefulness is not as generally recognized as it should be, and this is my apology for calling it to your attention. The method of application is simple. With the infant lying on its back and the hernia reduced and held in place by the finger, one end of the skein is laid over the open ring. The free end is now carried to the opposite side and under the back to the point of beginning, where it is passed through the loop in the end of the skein already in place over the ring and then carried down through the perineum and tied to the skein in the back; or, what I most often do, instead of passing through the perineum the skein is split and tied around the thigh of the same side. This leaves a loose, soft knot over the ring, and without undue pressure it may be drawn tight enough to effectually prevent

the descent of the hernia. It is necessary to provide several skeins so that change may be made whenever the child is wet or soiled. The child must be bathed with the yarn in place, and when changes are necessary the child must be recumbent and must not be crying, while the thumb of the nurse is kept over the ring so that the hernia is never allowed to come down. The child must be kept dry, and the skin, where pressure is made, well powdered. The treatment must be maintained for from six to twelve months, and though at first glance it looks very troublesome, it is wonderful how quickly the careful mother will go about it in a routine way; and after all it is much less troublesome and expensive than any form of truss, while in my hands, by its use, cure has been the rule.

If this method fail, then it is well to try what may be done with either a spring or elastic truss until the child is cured or is old enough for the radical operation, for in my opinion there is never a time while hernia persists that the treatment may be safely abandoned.

As to the age at which the radical operation may be done opinion differs. I have operated with success as early as the fifth month (operated because of strangulation), but it is usually best to wait until the child is four or five years old, both because of the possibility of cure without operation; and what is even more important, in very young children, the operation is more dangerous, and the abdominal muscles are too poorly developed to make us feel sure of the success of the operation.

This brings up the general question of operation in cases of hernia, and here, as in the treatment of hernia in infants, I do not believe our profession is fully measuring up to its duty in instructing the people as to the possibility of cure by radical operation. Most people suffering from hernia are facing a serious proposition. Not only do they suffer more or less constant discomfort, but they are excluded from many appointments in the public service; they are unfitted for

heavy manual labor, and at all times the menace of strangulated bowel stares them in the face. If they be overtaken by this complication then the predicament is indeed serious One of the very best surgeons in this Society told me he had never had a case of strangulated hernia, on which he was called to operate, recover. The death rate is 6 per cent when strangulated hernia can be reduced by taxis, and in cases where operation must be done the most reliable statistics show a death rate of 19 per cent. On the other hand, the operations for radical cure have been so perfected that the last report of the operations of Coley and Bull show a death rate of only 0.5 of 1 per cent, while the percentage of relapses following operation in 1,978 cases is as low as one-fourth of 1 per cent. In the face of these facts then, when a patient suffering from hernia seeks advice, I feel sure it is wrong to simply fit him with a truss and let him go, unless there be some very good reason why operation shall not be advised.

Just a word in passing as to the operation of choice in attempting the radical cure. In my own practice I have abandoned all methods except the operations of Bassini and Halstead. In the vast majority of cases the Bassini is the operation of choice both because of its simplicity and less frequent unpleasant sequelæ. Following the Halstead operation orchitis is common; atrophy of the testicle not infrequent, and. in one case in which I was consulted, a permanent and marked hypertrophy of the testicle resulted, probably due to the too complete excision of the veins of the cord and consequent interference with the return current of blood. These untoward results may be guarded against, and in direct inguinal hernia as well as in cases where the hernial opening is unusually large and the abdominal muscles poorly developed, I believe the Halstead operation as modified by Bloodgood offers the best safeguard against recurrence.

If we have not cured these cases by some form of truss in childhood or by the radical operation later, every moment they live they are in danger of strangulation, and we can offer

no absolute safeguard. It is a mistake to believe that the gut only becomes strangulated under violent exertion of some kind (cite Walser case), for, while this is a predisposing cause, I am satisfied that under conditions entirely beyond our control strangulation may and does occur; and this is especially true if there be present an irreducible hernia. Even with a well-fitting and, so far as can be made, effective truss, the gut may at any time slip under the pad and become strangulated. When strangulation does occur we are face to face with one of the gravest emergencies in surgery. *Ninety-five per cent of such cases, untreated, die.* The symptoms are usually not to be mistaken. A hernia previously movable suddenly becomes the seat of pain and is irreducible. It grows larger and no longer yields an impulse on coughing. The face of the patient looks anxious and pinched. In many cases there is a state of shock with colicy pain, nausea and vomiting, which sooner or later becomes stercoraceous. There is constipation and the abdomen becomes tympanitic.

If no hernia has previously existed the symptoms detailed are immediately preceded by the sudden development of a swelling in one of the usual situations of hernia, and the existence of such symptoms should always suggest the search for hernia. Of course I am detailing typical symptoms which when present admit of no question as to treatment; but in another class of cases the question is more difficult *for in these the symptoms are latent.* Twice in the past year I have had referred to me cases of hernia that had suddenly become irreducible. Apart from slight colicy pain and constipation and the fact that the hernia could not be reduced there were no symptoms, no excitement of pulse, no temperature, very little tenderness, no nausea; indeed, nothing to indicate strangulation, and yet, in each case, operation revealed strangulation with extensive gangrene of the gut, requiring resection.

If we suspect strangulation something active must be done. The terrible mortality attending these cases is due to delay in treatment, and when it becomes the rule to operate on

all cases within the first six or even twelve hours, the story will be different. Though it may be every doctor may not feel willing to do an enterectomy and intestinal anastomosis, every doctor should feel it his duty to cut down upon a hernia and relieve the stricture, or he should see to it that some one prepared to act is called at once.

True, it very often happens that the patient, used to more or less trouble with his hernia, is slow to call in aid; but this only makes it the more imperative that the doctor shall no longer delay.

Two methods of treatment may be restorted to: (1) Taxis, or reduction by manipulation; and (2) operation.

Taxis may be used for a short time—twenty or thirty minutes—if the hernia is of recent origin, or if it has been previously reducible and if the symptoms of strangulation are not of longer duration than six hours. Failing to reduce the hernia, after this reasonable effort, an anesthetic should be administered, taxis again tried for a few moments and, if failure result, operation should be done at once.

It is perhaps most important to determine the limitations of taxis:

1. Taxis is absolutely contra-indicated in irreducible hernia becoming strangulated.

2. Taxis is absolutely contra-indicated in small hernia giving rise to severe symptoms.

3. Taxis, if violent, has been known to rupture the mesentery, leading to fatal hemorrhage.

4. Taxis may reduce a hernia en masse or may rupture a gangrenous gut, leading to the error of thinking the hernia has been reduced or to fatal peritonitis.

5. Violent taxis often results in effusion of blood into the intestine, thus favoring the transmigration of microbes and the danger of gangrene.

6. The worst thing that can be said of taxis is that it too often leads to false hope and disastrous delay.

The steps of the ordinary oepration, up to the point of re-

leasing the constriction, are so well agreed on they need no discussion, but when this point has been reached the gravest questions will arise and the best judgment is demanded.

Of course if the gut is in perfect condition (and it will be if you operate promptly) then there is nothing to do but push it back into the abdomen and either close the wound or, if the strength of the patient will permit, proceed to do the radical operation. This is the ideal; but it too often happens that the intestine is gangrenous or the appearance is one so doubtful that even the wisest hesitate to act. If the bowel is gangrenous then there is open to the surgeon the choice of making an artificial anus or of resecting the diseased portion and doing an anastomosis by the method of his choice. Artificial anus shows a death rate 25 per cent higher than does enterectomy, and should never be done except in the presence of extreme weakness of the patient, for if the operator does not care to attempt an enterectomy I will later suggest a plan of treatment which permits the patient being safely carried to a hospital.

Hoffmeister declares when one decides to make an artificial anus in hernia he practically declares the case lost. As to the question of resection of the bowel, if one feels certain the gut is gangrenous then primary resection must be done as soon as possible, and as to the choice of methods I prefer the end to end anastomosis by suture to either the use of some mechanical device or to the lateral anastomosis, if gut of the same size is to be dealt with. After a little practice the end to end anastomosis is not very difficult, and the Maunsell mesenteric stitch makes it very safe. If the gut looks healthy one should carefully examine the mesentery, and if the veins are thrombosed the gut, if left, will certainly die, and a resection must be done well beyond the thrombosed area or the operation will be useless. Do not hesitate to excise as much intestine as may seem necessary, for as much as eight or ten feet may be removed without interference with nutrition; and, apart from the time consumed in controlling bleeding

from the mesentery, it is practically as easy to remove several feet as a few inches. The really difficult question is what to do in the comparatively large number of cases where one is uncertain of the necessity for resection. To enumerate, if the strangulation has existed for a considerable length of time a loop of intestine that looks and feels perfectly normal may later become gangrenous, even after all constriction is removed, for in most cases the degenerative process begins in the mucous membrane and is not apparent on the peritoneal surface till degeneration is well advanced. Dirty gray spots in the gut usually means death of the part, but apart from this the color does not give accurate information for "even dark blue intestine may be perfectly viable." The dark blue color may not disappear under the use of gauze wrung out of hot salt solution—the classic test; and yet the gut be viable. Feeble pulsation in the mesenteric artery indicates great danger to the gut, but the circulation may be gradually restored if thrombosis has not actually occurred.

When in doubt, then, it is best to wait some hours before risking the dangers of a resection; and in this event what shall be done with the doubtful intestine? Most authorities are silent.

Graser tells us that it has been advised that the affected loop be brought out on the abdominal wall and retained there, while we wait for recovery of the gut. He condemns this plan and advises that a rubber ligature be passed through the mesentery and the loop of the intestine be dropped back in the belly, to be withdrawn by the ligature if inspection is desired. Cheyne advised that the suspected intestine be replaced in the abdomen loosely and withdrawn for inspection later. To me the advice of neither is good, for in the one case coughing or other unexpected movement might displace the affected coil and make it hard to find; and, in either case, if the gut became gangrenous, the general peritoneum would be exposed to infection. The plan I have used many times with success is as follows: If in doubt the abdominal wound

is enlarged so freely that no constriction of the gut is possible and the suspected loop or loops brought out and laid on clean gauze on the abdominal wall. Gauze is now packed in the wound so as to prevent any further extrusion of the intestines, but with care to avoid compressing the suspected portion. The mesentery of the affected bowel is now punctured with a fine forcep and a strip of iodoform gauze drawn through, and this is later folded in the dressings to prevent retraction of the bowel. The bowel is now covered with sterile gauze and cotton and protected from pressure by an ordinary wire kitchen strainer. The strainer is held in place by a few turns of bandage, and over all is placed an abundance of cotton wool to aid in retaining the warmth of the intestine. The whole is held in place with bandages and the patient placed in bed with light hot water bags applied over the dressing to keep the parts warm. Many times I have used this simple method when in doubt as to whether resection must be done and, though it has not always succeeded, many times I have opened the dressing twenty-four hours later to find the gut fully restored and ready to be again put on duty.

Another advantage of this plan of treatment is that after a few hours the patient is in better condition to stand the resection if it must finally be done, for there is always decided amelioration of the general symptoms as soon as the strangulation is relieved, even though the gut becomes gangrenous.

Finally, I believe that if an operator is not willing to undertake an enterectomy if he will go so far as to relieve the strangulation, it is perfectly feasible by this method to transport a patient to a hospital or to wait till help may be brought to the patient.

HYDROCELE.

BY E. G. MOORE, M.D., ELM CITY, N. C.

The selection of this trite and seemingly unimportant subject has been for a dual purpose, neither of which is to demonstrate any special knowledge which I possess or desire to impart, but rather because of a lack of knowledge I have chosen a subject so simple; and the further fact, because of its simplicity, it receives but little consideration from those who write, teach or preach on things surgical. I do not hope to interest, entertain or instruct those of you who are trained in surgical thought or specialize in surgical work, for I know too well that larger ideas and greater thoughts encompass your minds and attract your attention. Perhaps had I chosen for my subject "The Absence of the Appendix," presenting you with an array of statistics corroborating the views and experiences of many writers and operators, I would have captured your attention and provoked a discussion which would have accorded me some little notoriety if not a reputation. This and kindred subjects are fads that are strikingly entertaining and peculiarly interesting; the periodicals and the doctors alike are full of them; hence little things often of great value are frequently unobserved or entirely overlooked. I take it that a large percentage of the membership of this Society devote their time and talents to the administration of drugs in the practice of medicine, and give but little if any attention to surgical thought or surgical procedure; and yet the subject under consideration is one of such frequent occurrence that it falls within the observation and experience of every practitioner, and its recognition and treatment are so simple that every doctor, though not a surgeon, should recognize and take care of these cases at home. I have seen a regiment of prostates but not of hydrocele; yet I have seen it in infancy, in youth, in manhood and in old age, and no doubt you have seen this also, since this disorder prevails wherever the footprint of man is found.

The more common form of hydrocele is that of the tunica vaginalis, and consists of a collection of serous fluid within this cavity. It is usually unilateral, yet may be bilateral. Its history is that of a slow and painless swelling, usually first observed in the lower or dependent portion of the scrotum and gradually extending upwards as the fluid accumulates. In shape it is oval or pyriform, having its broadest surface below. It is smooth and uniformly tense and often has a semi-elastic feel, but may become so tense and hard as to present to the sense of touch a strong resemblance to a solid body. In most cases the fluid is of an amber or straw color and may vary in quantity from a few to many ounces. In recent cases the sac walls are thin and hence fluctuation is more easily made out; but in old or chronic cases the walls are thickened or indurated and give rise to the appearance and feeling of a solid tumor. From the inner or serous surface of the sac wall exudes a secretion which gradually fills up the tunic space and produces the cystic condition which we call hydrocele.

It may be differentiated from a diseased testicle, varicocele or hernia, the last named being more frequently confounded with a proper diagnosis perhaps than any other condition. But when we recall that in hernia the swelling begins at the inguinal ring and travels downward; that if it is reducible, upon assuming the recumbent posture, with and sometimes without manipulation it disappears; that it has a soft or doughy feel and gives an impulse on coughing; and that in hydrocele we have a slow and painless growth, beginning below and extending upwards, first soft, then elastic and then tense, that position has no effect upon its relation and that its one distinguishing feature and characteristic is its translucency to transmitted light, there should be no error made.

The treatment of hydrocele is palliative and radical. Simple tapping of the tumor relieves the accumulated fluid, and this is often curative; yet the tendency is to reformation. After withdrawal of the fluid irritation of the membrane with

the point of the needle or stylet so as to get up some inflammatory action is a better procedure still. The injection method of Levis preferably with carbolic acid, a clear description of which is given in the text-books, is curative in a still larger number of cases and is estimated on a percentage basis of seventy-five to eighty-five per cent. This treatment is practically painless and properly used is void of danger. It is specially adapted to recent cases and in young subjects with thin sac walls. In the more obdurate and chronic cases of long standing, with large accumulation of fluid and thickened sac walls, the injection method is frequently met with failure, and then the open method by incision or excision or both is not only the method of choice but the certain means of cure. It matters but little except as a personal choice of the individual operator what disposition be made of the sac; whether partial or complete excision, or everting it so as to envelop the testicle and stitching the edges with catgut; the idea and object to be sought is the obliteration of the sac, for this affords the only positive assurance of a complete cure. The technique of these procedures are to be found in the books of surgery and need not be repeated here. Make your diagnosis and exclude diseased testicle, variocele and hernia. In very young children tapping, followed by irritation with the point of the needle, is usually sufficient. In older children or in all recent cases tapping followed by carbolic acid injection gives greater promise of better results. Such cases as are not cured by the injection method often respond to the incision method of Volkmann, but destruction of the sac is perhaps the only certain guarantee of a cure.

CONSERVATISM IN RAILWAY SURGERY.

BY W. P. WHITTINGTON, M.D., ASHEVILLE, N. C.

In presenting this paper I do not wish to do so in a spirit of criticism, but wish to say something that will be of benefit to the surgeon, both civil and railway, and that will possibly be the means of saving the life or a useful limb of some unfortunate victim of a railway accident.

The position of a railway surgeon is a dual one: professional and diplomatical. His professional duty would require him to consider specifically the relief and safety of his patient, while as a railway official he must take into consideration the interests of the company by which he is employed. In reality he should and must have at heart the mutual interest of both. While this is very desirable, it is still a hard matter to eliminate the influence of the employer over the employed and do justice both to the railway and the injured. The powers and influence of the surgeon over public opinion is such that he may easily favor his employer, and at the same time make it appear that he has done the best possible for the injured.

For instance, the surgeon may be called to a patient with a mangled hand or foot that looks to the layman to be beyond repair or out of the power of the surgeon to save. The surgeon knows that if the limb could be saved it would require a long, tedious watching and careful antiseptic treatment. He also knows that if he amputates above the injury he has healthy tissue, a clean stump and that in two or three weeks the patient is well, but minus a member that might have been saved and have been of great benefit to the injured.

In such a case the surgeon is commended for doing the best thing possible for his patient. The patient is furnished an artificial leg or given a small compensation for a hand, and goes through life maimed and worth but little to himself and family; when if he had been treated antiseptically this

limb would have been saved and would have been a great blessing to himself and family.

I know a man who had a badly lacerated hand and his surgeon told him it must be amputated. The patient refused to have it done. The surgeon told him that he would have to put him to sleep before he could dress it. The patient submitted to the anesthesia, but told the surgeon that if he amputated the hand he would kill him. The hand got well and the man can do any kind of work. He has a crippled but useful hand.

I know a man who had a compound comminuted fracture of the leg, opening up the ankle joint. It looked like an impossibility to save the foot. The foot was wrenched to one side so that the ankle was dislocated and the end of the tibia protruded through the skin. A drainage tube was passed clear through the joint, and the leg was treated antiseptically. The man got well with a useful foot and leg, but with a limited amount of motion. I could report a great many cases of extensive laceration, fractures, contusions and mangled conditions that have been saved by patient and persevering antiseptic and supportive treatment. While, on the other hand, I have seen valuable limbs sacrificed for want of such treatment. One might say that it is best not to subject our patients to so great a risk as is necessary to carry out an expectant antiseptic course of treatment; that there is danger of sepsis, gangrene and death. That there is always some danger we will admit. The surgeon should be very alert, and when bad symptoms appear he should pursue such method as is necessary to remedy the threatened evil. We are not justified in amputating a foot because a nail has pricked the heel and we are afraid the patient might have tetanus. The method to pursue in these cases of railway and other injuries to the extremities is one of thorough antisepsis from the beginning. The patient should be cleansed as thoroughly as possible without further contaminating the wound. The injured limb should then be thoroughly washed with soap and water, bi-

chloride of mercury, one in two to four thousand, owing to the extent of the injury. This should be followed with alcohol and ether and finally rinsed with bichloride. In extensive injuries, where there is a great deal of denuded tissue, it is best to continue a wet dressing of a saturated solution of boracic acid or sulphate of alum. In very extensively mangled legs or arms the limb may be immersed for from twenty-four to seventy-two hours in a saturated solution of sulphate of alum. This solution of sulphate of alum is not extensively used, so far as I am informed, but it is practically harmless and has fine antiseptic powers and acts as an astringent on the extensively lacerated and bleeding tissues. As soon as the bleeding ceases and if the tissues show an anæmic appearance the solution should be discontinued or made weaker. Dry or moist antiseptic dressings should be continued and sloughing surfaces separated as early as possible, care being taken not to open up raw surfaces more than is necessary, as such a proceeding would encourage the absorption of septic matter. Another good method is, after the parts are thoroughly cleansed with soap and water, to mop the raw surface thoroughly with pure carbolic acid followed with 95 per cent alcohol, and paint it thoroughly with tincture of iodine. After healing has taken place it may be necessary to do plastic operations to complete the work that nature failed to do.

REPORT OF A CASE OF TYPHOID CHOLECYSTITIS. OPERATION, RECOVERY.

BY WM. A. GRAHAM, M.D., DURHAM, N. C.

Typhoid fever is now generally recognized as being important in the etiology of acute and chronic disease of the gall bladder. Many of the cases of acute infection are overlooked, or are mild enough to subside during the course of the disease; hence it is difficult to determine the percentage of cases of typhoid which have acute infection of the gall bladder. The percentage is probably larger than is generally accepted, and the following case is reported as illustrating the condition:

J. B. A., eighteen years. School and farm work.

Family History.—Father at 44; mother at 36, and one brother at 10 died of typhoid fever. Two sisters and two brothers living and well; all recovering from typhoid.

Previous History.—Measles, whooping-cough, mumps and acute rheumatism in childhood. No other serious disease.

Present Illness.—First seen July 25, 1907, and admitted to Watts Hospital. Had spent previous week at Jamestown Exposition and returned sick. Symptoms presented were those of a moderately severe typhoid at about the end of the first week. The diagnosis seemed positive and no Widal reaction was taken and no blood count made. The disease ran a typical course, with evening temperature 103 to 104 degrees until the eighteenth day, when an enema brought away a large quantity of stale blood. Further hemorrhages occurred on the nineteenth, twentieth and twenty-first days, and were treated with morphia and adrenalin hypodermically, with ice locally. A voluntary stool on twenty-third day showed no sign of blood. The temperature fell at the time of hemorrhage and remained low until the evening of the twenty-fifth day, when it rose suddenly to 102 degrees. This was repeated on the twenty-sixth day, with severe lancinating pain over

right upper abdomen and liver, more marked on deep inspiration with a gradual rise of pulse from 88 to 106, and respiration from 24 to 36 per minute. Examination showed local tenderness along edge of ribs, and moderate rigidity of right hypochondrium. There was distinct friction rub on auscultation over liver and edge of ribs, which spread over a larger area in the next few days, finally extending from sixth rib above to appendiceal region below; but best heard in gall-bladder region. There was no jaundice at any time. Pain continued severe, most marked when stomach or colon was distended; vomiting occurred daily and urine showed presence of bile. Temperature was irregular but not over 102 degrees. In forty-eight hours a tense tender gall bladder could be palpated when there was no distention of the colon, but was not palpable when the colon was distended. Repeated vomiting and distention of the stomach prevented the patient from taking food, and a gradual failure of general strength demanded operative relief.

Operation.—Under ether laparotomy was performed through the right rectus on the thirtieth day. At operation widespread spider web adhesions were found between stomach, duodenum, colon and parietal peritoneum. The gall bladder was tense, very dark in color, and bound down to the hepatice flexure by a dense adhesion deep in the abdomen, at which point perforation would probably have occurred. In freeing it there escaped several ounces of fluid, at first thought to be bile, but probably serous fluid from the local peritonitis as the bladder remained distended. Bladder was raised to the abdominal wall, aspirated, freely opened and no stones found. Walls of the bladder were much discolored but otherwise in fairly good condition. Bile obtained on aspiration was very dark, with a few white flakes suggesting the beginning of suppuration. Bladder was stitched with chromic gut to the parietal peritoneum, drained with rubber tubing, rubber gauze drainage placed above colon and wound closed with through and through silk-worm gut stitches. It is to be re-

gretted no bacteriological examination of the bile was made.

Post-operative History.—Hemorrhage from the bowels occurred twenty-four hours after operation, and was again controlled by morphia and adrenalin. Except for this convalescence was uneventful, though prolonged from continued drainage of bile with a tendency to the formation of a biliary fistula. Patient dismissed five weeks after operation and at present is in excellent health.

Points of interest in the case are found especially in the diagnosis and indication for operation.

Diagnosis may be difficult or easy, depending often on the mental condition of and the aid to be obtained from the patient. In this instance the symptoms were strongly suggestive of diaphragmatic pleurisy for the first two days. Pain worse on deep breathing, friction rub on auscultation heard on both expiration and inspiration, though best at the end of inspiration; rise of pulse and rather disproportionate rise of respiration pointed to pleurisy. Vomiting, the fact that the pain was abdominal and increased by distention of the colon, careful location of the tenderness, and finally, palpation of the distended gall bladder rendered the diagnosis positive.

Indication for operation, as against further expectant treatment, was based on the gradual spread of the local peritonitis, with continual severe pain and vomiting, inability to nourish the patient, the possibility of rupture and the avoidance of suppuration. There had been no chills or marked sweating and it was not thought that suppuration had occurred. In fact, it was believed that this particular patient's chance of recovery depended on drainage before he was subjected to septic symptoms from suppuration, and the findings at operation would seem to show the wisdom of comparatively early laparotomy in these cases.

APPENDICOSTOMY IN AMŒBIC DYSENTERY.

BY BRODIE C. NALLE, M.A., M.D.,
Professor in N. C. Medical School, Charlotte, N. C.

The operation of appendicostomy is a comparatively new operation, and, so far as I can find from available literature, no case has been reported from North Carolina.

Therefore, I thought it worth while to report this case. In short, the operation consists of the fastening of the appendix in an abdominal incision in order, through the lumen of the appendix, to apply irrigations to the colon.

This operation has been performed probably less than one hundred times, with no deaths due directly to the operation; a fact which should commend the operation and make us consider its performance in our cases of obstinate affections of the large intestines, whether these affections are due to amœbæ or other causes.

Here in the South we certainly need help in our intractable cases of dysentery, and my object in reporting this case is with the hope of influencing some of the members of this Society to try this operation in those cases where medicine fails.

My case was a woman, forty-eight years old, who had suffered from several attacks of amœbic dysentery which, up to the last attack, had been relieved for a while by rectal irrigations of quinine solution. Recurrences became more frequent and the last attack could not be relieved by rectal irrigation. In fact, the condition of the rectum made such irrigation unbearable. The list of internal medicines was faithfully tried, with no improvement, but with the rapid failing of the patient.

At this time the patient was having from twenty to thirty bloody mucous movements a day, with severe pain and tenesmus.

Physical Examination.—Patient very anæmic and terribly emaciated. Pulse 120 to 130; temperature as high as 102 F.; heart and lungs normal. A mass the size of a hen egg at the pylorus, which, after a chemical examination of the stomach contents, we felt justified in diagnosing cancer of the stomach.

Microscopic examination of the stools showed amœbæ in great numbers.

At the request of the patient and her family to do something to relieve her suffering the operation was performed. The usual technique was followed, with the exception that we entered the lumen of the appendix at the time of the operation and started saline irrigation immediately, instead of waiting the usual two or three days for the sloughing of the end of the appendix. This was done from necessity, since it was obvious that the patient would not live without immediate relief. The irrigations brought away large quantities of blood and mucous for several days, with only four to six movements a day, and these were with almost no pain or tenesmus. On the fourth day quinine irrigations were substituted for the salt solutions, with a continued improvement in the character and number of the movements. On the tenth day the patient had only two movements in addition to the one following the irrigation. Daily irrigations of salt were now kept up for five weeks, with a steady improvement in the condition of the patient. At this time the patient was greatly improved and her condition, in spite of the cancer of the stomach, was very gratifying, and had the meeting of this Society been a few days earlier my paper would have ended more pleasingly.

When I thought the patient well of her dysentery I was called suddenly to find her suffering from a severe hemorrhage of the stomach, which she survived only a few hours. This ending, however, does not deter me from calling your attention to the prevalence of amœbic dysentery here in the South, and to the fact that in many cases it is not diagnosed.

The diagnosis by means of the microscope is certain and easy, and for this reason we are to be blamed if we do not

make our diagnoses early, and are willing to call our cases tuberculosis of the bowels, etc. I do not advocate the operation of appendicostomy for every case; far from it, but put in a plea for its trial in those cases which do not improve under internal medication and rectal irrigations. Many cases can be cured by carefully administered irrigations of quinine or thymol, but some will not respond to these methods of treatment, and others, owing to the condition of the rectum, can not be treated with irrigations.

To repeat, amœbic dysentery is common here in the South, it is on the increase; it produces rapid anæmia and emaciation, and is often fatal. The treatment is easy and effective, whether it be by irrigation or by this operation. Therefore it is not to our credit to let these cases go undiagnosed or fail to attract our serious consideration.

No description of the technique of this operation nor of the symptoms and pathology of this disease has been attempted, as all of these have been much more ably presented than can be done by me.

I only wish to place my case on record and interest you, if possible, in the fatality and common occurrence of this disease here in North Carolina.

LOCAL ANESTHETICS IN SURGERY.

BY JOHN A. WILLIAMS, M.D., GREENSBORO, N. C.

No doubt in selecting the subject of "Recent Advances" in surgery the doctor knew that I could not give in one short paper all the recent advances and modern improvements in surgery within the last year or so. It would take a paper of considerable length, and then I would only be able to give a smattering idea of the wonderful improvements made along this line of the profession within the last few years. I have, therefore, taken the liberty of selecting one branch of this great subject, that I may go more deeply into detail and have it discussed more fully by members of this body.

I have chosen, therefore, as my subject upon this occasion "Local Anesthetics in Surgery." There has been such an improvement along this line from a surgical standpoint within the last few years that I think it worth while that each of us should give more time and study to this individual branch of work. Not only does this bring forth a subject interesting from a scientific standpoint, but also from a financial point of view.

It is a well-known fact that there are a great number of people who absolutely need an operation, and would have the work done readily if it were not for the fact that they would have to take a general anesthetic. Of course we all know that we can not do all operations under local anesthetics. However, when I say a great deal more can be done than we do, I by no means exaggerate the use of this mode of anesthesia. I have seen within the past year over fifty cases of hernia, four cases of appendectomy and numbers of cases of varicocele, and hemorrhoidal operations a la galore, as well as all kinds of tumors, etc., removed by this mode of anesthesia, comparatively painless and without harm to the patient. I admit I myself was astonished at the immense amount of work that could be accomplished along this line of work.

When I began to look into this factor from a surgical standpoint I found a great deal could be accomplished by simply giving a little time and patience to this mode of anesthesia. One reason local anesthesia is not more widely known and used is because the surgeons have given so little time to the matter and have never learned the "modus operandi" of using these "Godsend methods" to humanity.

I will name the most important of these methods used and give a little time to each, hoping that you may hereafter study them more closely, and come to your own conclusion as to which is best for your patient and yourself. The following is a list of those used up to the present day: 1, Water; 2, Keelene; 3, Ethyl Chloride; 4, Ethyl Bromide; 5, Adrenalin; 6, Eucaine; 7, Stovaine; 8, Tropo-cocaine; 9, Novocaine, and 10, last but not least, Cocaine.

1, Water sterilized may be used to excise small cysts, warts, fatty tumors, etc. If used properly these small tumors can be easily and painlessly removed. You will have to take time, injecting and infiltrating the tissues slowly, thus causing pressure on the nerve terminals, finally causing paralysis of the terminals, so you can do a painless operation. If the infiltration is too rapidly done it causes pain and thereby you lose what you were aiming to gain.

2, Keelene; 3, Ethyl Chloride. These are used as a method of freezing the parts. They are used in the form of a liquid spray, spraying the parts until thoroughly frozen. If there is much inflamation the freezing will have to be deep, and you have to operate quickly, as this mode of anesthesia only lasts a short while. I have known where the parts are frozen deep, that in thawing it will frequently give rise to pain. Either one of these can be used to anesthetize a spot for the hypodermic injection, the first penetration of the needle in using the other methods, which I shall mention. Ethyl Chloride is considered by far the best and less harmful of the three, and therefore more widely used. This method is of great benefit—small abscessed boils, felons, etc. I have used this

method very successfully in some cases, and I have again had it to give a great deal of pain, to my disgust as well as to the patient's.

5, Eucaine. I must say I have never used this, while it is a synthetic compound used in the place of cocaine, and some claim it a great deal less harmful. It is said to be of great service in nose and throat work in conjunction with adrenalin.

6, Adrenalin. This has same anesthetic powers, chiefly by contracting the capillary blood supply, it acts indirectly as an anesthetic and is of great service in nose and throat work, especially of great service when used with novocaine.

7, Novocaine. Mono-hydrochloride. This is a synthetic compound. It comes in crystals, and easily dissolves—equal parts of water and alcohol. It is similar to cocaine in its action. It is said to be by far less toxic than any of the substitutes for cocaine. It can be used in 5 to 20 per cent solution for injection, and even stronger for local applications without harm. When injected it exerts a powerful anesthetic effect, but of very short duration. The prolongation of its anesthetic effect may be greatly facilitated by the addition of six or eight drops of (1 to 1,000) solution of adrenalin. It gives rise to no irritation and used very successfully in minor surgical work.

8, Tropo-cocaine. Tropo-cocaine-hydrochloride. This is a synthetic compound resembling cocaine in its action, being about one-half as toxic, therefore double the strength or quantity can be used. The anesthetic effect is said to be much more rapid and lasts longer than any of the substitutes for cocaine. Its action is greatly facilitated by the addition of a small quantity of sodium chloride (6-10 of 1 per cent), or better by using a normal salt solution in surgical work.

9, Stovaine. This is a synthetic compound. It is the hydro-chloride of Dimethylamine-beta-benzyolpentanol. It is similar to cocaine in its action, but far less toxic, being almost free from toxicity. It has no vaso-constrictor action, and

therefore does not give rise to vertigo, nausea or syncope. It is incompatible with the alkalis and their reagents, mercury and iodine compounds. It is used very successfully in the removal of small tumors, opening of abscesses, boils, etc. The addition of a little salt aids in anesthetic properties.

10, Cocaine. Cocaine anesthesia is an old and tried method. It is a well-known fact that the cocaine anesthesia is more widely known among the profession than any other of these preparations. Some have used it from time "immemorial." Others have used this method only to their sorrow and disgust, determined to lay it aside never to use it again.

I said before, this use of local anesthesia requires more time and patience in its use than does a general anesthetic. It also requires a great deal of skill, and it is a great deal more tedious to the surgeon doing the work than it is to work under a general anesthetic. Therefore, when it is used we should charge a great deal more for the work done instead of, as is customary to charge less. Dr. Wyeth, of New York, used to charge, and does yet, just twice as much for an operation with cocaine as he does with under general anesthesia, and it is nothing but right that he should. When properly studied and used, cocaine is, to my mind, the chief and greatest of local anesthetics. It has been brought into somewhat disrepute by purely the ignorance of its use. While there are some idiosyncrasies to cocaine as to almost any drug, they are few, and the bad effects of its use is a great deal more often due to not knowing how and the discriminating use of it. As any other anesthetic, it should be used with the patient lying down, and the syncope effect will be vastly eliminated. The patient should always have a good drink of whiskey and a hypodermic ($\frac{1}{8}$ to $\frac{1}{4}$) of morphine one-half hour before the operation, as both have a tendency to counteract the depressing effect it may have on the heart and respiration. Just as the operation is begun give another drink of whiskey. Always, as in any other anesthetic, have a hypo-

dermic of morphine and strychnine ready to be given at any time. This being done, the infiltrating method (being first introduced by Sleick, of Germany) of using cocaine is easily done.

Sleick had three solutions, strong, medium and weak.

First.

Cocaine	gr. 3
Morphine	gr. $\frac{2}{5}$
Salt	gr. 3
Water	oz. 3-$\frac{2}{5}$

Second.

Cocaine	gr. 1-$\frac{1}{2}$
Morphine	gr. $\frac{2}{5}$
Salt	gr. 3-$\frac{2}{5}$
Water	oz. 3-$\frac{2}{5}$

Third.

Cocaine	gr. $\frac{1}{6}$
Morphine	gr. $\frac{2}{5}$
Salt	gr. 3
Water	oz. 3-$\frac{2}{5}$

He only used the first solution when there was a great deal of inflammation and sensitiveness. The second he more often used for skin infections, and the other tissues with the weaker, third solution.

Bodine uses a solution of 1 to 500 for his skin injection, and 1 to 1,000 for subcutaneous injections. This is what I have seen and used mostly myself. The first puncture of the hypodermic needle is the only pain comparatively. This can be remedied by the use of ice or a little ethyl-chloride to begin with. After the first puncture, infiltrate the superficial skin, withdraw the needle and insert behind the edge of the first infiltration. This is kept up until the length of skin you want to incise has been anesthetized. Then go back and with the 1 to 1,000 solution you infiltrate the subcutaneous and deeper tissues. This method being used in fifty or sixty cases of herniotomy (I have seen), also in three cases of appendectomy, several cases of amputation of the thigh, and in a majority of cases of minor surgery of the rectum. Dr.

Lynch, of the Rectal Surgea, says that while all cases of rectal surgery can not be done with cocaine, that by selecting your cases the majority of such work can be. He has done a number of Whitehead's operations for hemorrhoids by this method of cocaine infiltration. Out of the cases that I have seen operated on, I have never seen any ill effects whatever. I have a number of times seen four or five inches of omentum ligated and cut off in hernia operations. The whole operation is absolutely painless, extending over an hour and not over a half or three-quarters of cocaine used. Of course there is a certain class of patients, of a nervous, hysterical nature, that nothing less than a general anesthetic will do, as the pain is more mental than real; but when we stare these facts in the face, and really see what can be done by their use and in such small quantities, we can only say there is a great future for its use. I agree with Dr. Lynch, that after using all, or nearly all, that this method of cocaine infiltration as a local anesthetic in surgical work by far exceeds all the rest.

SOME POINTS IN MINOR SURGERY.

BY W. J. McANALLY, M.D., HIGH POINT, N. C.

As the general practitioner of medicine is the one who must do most of the minor surgery, it is therefore not amiss for a general practitioner to discuss this subject. In the course of my work along this line some things I have observed have appeared very important and impressed me forcibly. All men make practical and useful observations in their work, and thus is the store of useful information ever increased. Should be glad to draw from you some of your ideas which you have formed from careful study of your work. If some of the nuggets of truth which men here have dug up are not presented to this meeting after I sit down it will be because your interest is not aroused. In treating a great many injuries of the hands and face the astonishing power of repair possessed by the tissues of these parts has impressed me much. It would seem as though there is no limit to what may be repaired about the hands and face. With bones cut or crushed and tissues destroyed and blood supply nearly or quite cut off, yet much can be saved. And, as it is usually a man who labors with his hands for his daily bread, it is very important to save every particle of the hand and fingers possible. To save the parts is more important than to make them neat. No shreds or tags or flaps of skin or tissue having any attachment should be cut away when dressing an injury to the hands. For every such particle of tissue about an injury here will rapidly throw out granulations and assist materially in the process of repair. Often the patient will complain when an effort is made to save what appears to him to be a hopelessly injured finger. But the vitality and power of repair in that finger is marvelous and it should not be sacrificed because of his lack of faith. A safe maxim is never to cut off any part of an injured finger or hand at the time of first dressing. If proper dressing is applied no injury will follow the necrosis of

a flap or even a finger or more. And any necrotic parts may be removed at subsequent dressings or allowed to slough off. Another consideration is sutures and ligatures. As the saving of every particle of tissue is of first importance in treating injuries to the hand, we ought to put in just as few sutures as can be gotten along with, for sutures and ligatures constrict and strangulate tissue and cut off a certain amount of blood supply. A suture near the base of long tag or flap may destroy its feeble blood supply and cause necrosis. Again too heroic efforts to cleanse the wound will lessen the vitality of the parts. Many of the injuries treated in our town are produced by wood-working machinery and the material used upon these machines is thoroughly kiln-dried, and many clean cuts by these saws and knives are never washed by any antiseptic solutions or even sterile water. To avoid injury to the parts the tags and scraps of an injured finger or hand are gently placed in position after first cleansing my own hands in strong bichloride solution, and then dressed with gauze saturated in balsam peruv., no sutures being placed at all. The blood which was allowed to remain upon the wound will hold the parts in position. Now, if this first dressing is wisely allowed to remain on for five to seven days, and kept moist for the first two to four days in a solution of Ac. Carbolic one drachm, Sod. Bicarb. six drachms to aqua one quart, there will be no congestion or inflammation. The moist dressing keeps the injured part comfortable by preventing congestion. And any congestion or inflammation in the tissues of hand or fingers is very painful because of the abundance of cellular tissue here. The moist dressing aids repair by preventing congestion.

Another important consideration in the saving of these injured parts is the medico-legal side. The injury may often be very substantially minimized by conservative efforts and in this day of unending, never-ceasing law suits, verdicts for damages.

CARBUNCLE—ITS ETIOLOGY, PATHOLOGY, ETC., WITH A TREATMENT COMMENDED.

BY THOS. E. ANDERSON, M.D., STATESVILLE, N. C.

Mr. President and Gentlemen of the North Carolina Medical Society:—My apology for afflicting this Society with this somewhat homely and melancholy subject will find justification, I hope, in a treatment which I propose to exploit. First, let us take a glance into the etiology, pathology, etc., as viewed by present day observers. Carbuncle was formerly looked upon as a peculiar, mysterious disease, having a pathological process of its own, with little or no relationship to any other disease, either in its etiology, its pathology or its indications for treatment. And owing to the allurements of visceral surgery and the more remunerative and inviting fields in the dark, unfathomed caves of the human organism, we are still in bondage to the traditions of the older pathologists, this being one of the more common diseases which have received scant attention. In this belief I essay to ascertain and correlate what is known of the cause, nature and treatment of carbuncle. The observation has often been made, and should be reiterated, that the names anthrax and malignant postule should no longer be used interchangeably with carbuncle. To avoid confusion the former anthrax should be only applied to that disease of the lower animals which is contagious, sometimes communicated to man, and is caused by the "anthrax bacillus;" while the latter term, carbuncle, should be reserved exclusively to designate the disease under consideration. Carbuncle is a disease of microbic origin like all of its class. This being abundantly demonstrated by several observers, of whom Gawe, Bockhardt and Baum are most prominent.

The micro-organism most frequently found is the "staphylococcus anreus." In the minority cases there are present also the staphylococcus albus or the streptococcus pyogenes, or the two together with the first; but always outnumbered by it.

The coccus may enter the skin through the hair follicles, the sebaceous gland ducts, the sweat glands or an abrasion of the epidermis. The theory of entrance to the body through the alimentary canal or respiratory tract is by analogy an entirely tenable one. We are nowhere more in bondage to the traditions of the elders than in the belief that this disease is of constitutional origin; the notion that it is a disease of the cachectic, the alcoholic, the tubercular and the diabetic was readily accepted and easily believed before local causes were demonstrated. The most that can be rightly claimed for the constitutional factor is that it lowers the general resisting powers, increases the vulnerability of the tissues, and thus allows free entrance to the casus morbi. Even the diabetic, so prominently associated with carbuncle, does not often have this complication. Though there are no statistics at hand to prove it, it is a matter of doubt whether it is found more often among the cachectic classes than in those of good health. This idea of ascribing it to the cachectic probably grew out of the fact that statistics were gathered more from almshouses and public hospitals, rather than from private practice. However this may be, it is certain that whoever ignores the local origin and local nature of the disease scatters abroad and is handicapped and disarmed in the proper treatment of his patient. Carbuncle is a disease of middle life, while furuncle is a disease of the adolescent. Viewed pathologically carbuncle is an acute suppuration of connective tissue, and hence is generically related to osteomyeletis, parenchymatous abscess, acute abscess, furuncle and other suppurative diseases of the skin. The region of predilection of carbuncle is the dense and fibrous integuments over the posterior median line of the body. The skin of this region is characterized by its extreme thickness, especially the relative thickness of the cutis vera. and the aponeurotic-like density of the papillary layer, and its having few and small openings. The pus coccus having passed down and invaded these tissues a focus of inflammation is begun, and we have all the factors and conditions necessary for

the production of a typical carbuncle. The delicate areolar adipose tissue succumbs and liquefies, and as tension increases pus is forced to the surface by mucous along the lines, or of the hair follicles, its only avenue of escape; as tension increases the inflammation is forced to extend laterally farther and farther from the original focus, and thus we have the hard elevated outlines.

As my object in this paper is purely or mainly to call your attention to a mode of treatment which I had never seen advocated up to this time, and which gave such prompt relief in a case falling under my care, I shall not longer incorporate into this article the painstaking research of another from whom I have culled most liberally and bodily—a paper read before the last Pan-American Medical Congress at its meeting in Washington City by Dr. D. W. Graham, of Chicago, Ill., the data in the usual channels being very meagre. The history of means and methods of treating carbuncle would fill a volume. Many good surgeons advocate a purely expectant course and discard all active means, relying on internal medication, and treating it as a self-limited disease. Caustics, incisions, single, multiple, and the honored crucial incision are relied on by others. These are to be recommended in the absence of more efficient means; but they all fall short of the end desired. Then the method of injection of dilute carbolic acid and various antiseptics has its advocates. But it is not my purpose to review and compare discarded or prevalent methods. As a substitute for all of these I would advocate *"total extirpation"* of the indurated mass, just in the same manner as we would remove a benign tumor. And if this is done early the entire skin can be saved, as was demonstrated in the case which I am about to relate.

Along in the early spring Mr. N. B. M., aged about forty-five, in a somewhat run-down state of health—one of our most enterprising and wealthy citizens, was the victim of this most malicious foe to happiness. The site elected for the exhibition of its relentlessness was the one most popular.

namely, the nape of neck. Commencing by darting pain, some heat and swelling, it surely and steadily fastened itself upon him; and while a man of large possessions he became entirely oblivious of all except the possession of this vicious carbuncle. I tried various and sundry applications, the meanwhile securing for him some relief by full hypodermic doses of morphine. The symptoms hourly grew worse; heat and swelling increased; the whole back of the neck became red and tense; there was some delirium and color suggested septic influences at work; the patient was anxious and apprehensive; indeed I feared meningitis might ensue. The sources of our knowledge, the books, availed me but little. The tumor by this time elevated and outlined, a hard mass. It occurred to me that while the skin still maintained its integrity why not make a cross incision and dissect out the involved tissue? Calling my able friend, Dr. H. F. Long, to my assistance, who after some deliberation fell in with my idea, we proceeded without delay to anesthetize him, and under the rules of modern surgery entirely removed the indurated mass, first carefully dissecting back the skin; packing with iodoform gauze, suturing the edges of the skin together and applying over all a liberal supply of same gauze completed the operation.

Fever, pain and all the existing evils at once subsided; he did not need another dose of an opiate; his exiled smiles returned, and he made a prompt though somewhat slow recovery as the excavation had to fill up by deposit; yet there was no more pain and much time was gained over the slow processes of suppuration, not to speak of the wasting of the body and the sleep murdered.

I had never seen or heard of this procedure before, though many here may be familiar with it. I offer it to those unfamiliar with it, and commend it as the best way to subdue this stubborn and painful foe.

CHONDROMATA, AND REPORT OF A CASE UNDERGOING MALIGNANT DEGENERATION.

BY EUGENE B. GLENN, M.D., ASHEVILLE, N. C.

A chondroma is a tumor composed of cartilaginous tissue, and as might be expected the cartilaginous are the most common of the benign osseous tumors. All varieties of cartilages are found in neoplasms, hyaline being the most common, and fibro-cartilage and reticular cartilage being rare. Fibro-cartilage tumors are most frequently in the salivary glands or about the ligaments.

There are two classes of chondromata, namely: those which spring from normal cartilages or the bone, and those which originate elsewhere. In the first case the tumor grows slowly and resembles epiphyseal cartilage in their structure, and are usually to be found in the neighborhood of the epiphysis, an examples of which are found in the photographs I am passing around.

Tumors which develop elsewhere are seldom pure chondromata, and often show malignant characteristics. In many cases they appear to be left anchored upon the shaft at the point where they first appeared, so that the tumor which first appeared near the end of the bone is later near the middle of the shaft, the epiphysis having grown beyond them. In some cases it has been shown that small fragments of cartilage may be left behind in the ends of the long bones as the epiphysis advances, and if they remain without ossification they are ready to form tumors later in life. This fact explains the frequent association of rickets with multiple chondromata, for irregular ossification is often observed in that disease.

Chondromata most frequently begins in childhood, when the bones are actively growing. It is estimated that about two-thirds of chondromata originate from some part of the skeleton, and over one-half of these in the hand and foot. Chondromata growing from costal or nasal cartilages are usu-

ally small. They are also common in the jaws. Chondromata have been found in subcutaneous tissue. Chondromata found in the ischio-rectal space, testis, breast and parotid are seldom pure, and usually a part of the mixed tumors in the salivary glands are associated with sarcoma. Misplaced fœtal remains are described as a cause of pure chondromata in these regions. Those in the parotid have been derived from the bronchial clefts or the ear. Chondromata are frequently multiple, and in rare cases they are seen in great numbers, distorting the limb and jaw, displacing the eyes and producing such deformities which not only render the patient helpless, but may terminate in death. They grow without pain or other symptoms, only as may be caused by their bulk or pressure. They interfere with parturition when found in the pelvis. They may cause spontaneous fracture to occur in the shaft of the long bones which become atrophied by pressure of the tumor. When they produce inflammation necrosis and sloughing frequently follow. Chondromata may undergo gelatinous softening and become cystic; they also become sarcomatous in many cases, but they are more liable to calification and ossification. After injury to the bone chondromata develops with great rapidity, and on their removal they may return, finally undergoing sarcomatous degeneration and form secondary tumors in other parts of the body. The true chondromata, growing from the bone, are rarely seen as secondary deposits in the lymphatic glands and in the lungs. So-called mixed tumors contain cartilaginous tissue. Chondromata are usually small, although not incapable of attaining a huge size. They are fixed to their parts of origin, but without attachment to the surrounding parts. The overlying skin may be unaffected for a long time, but ultimately become ulcerated and a sinus is established, communicating with the breaking down tumor mass. They form hard, smooth, round or lobulated masses. It is often impossible to make a diagnosis between ossification and chondromata of the epiphysis, but examination by the needle will be of great

advantage as the point will penetrate the chondroma, but not the ostema. The majority of these tumors require no treatment, but they should be thoroughly eradicated if an operation is attempted. If the base is thoroughly gouged out in the pedunculated variety they will not return. Amputation is the only remedy for those of broad bases, sometimes encircling the bone or originating in the centre. Chondromata which arrive independently of the normal cartilages usually grow slowly, but are subject to malignant change; and when they occur in the parotid they should be removed unless there is great danger of injury to the facial nerve. Softening and rapid growth indicate malignant change and the necessity for radical treatment, which should consist of complete extirpation, not merely enucleating the tumor out of its capsule. When chondromata occur in the upper jaw, on account of their liability to recurrence and finally undergoing malignant changes, the bone should be sacrificed at the first operation.

History.—Patient, a young boy fourteen years old. Had had measles, scarlet fever and whooping-cough in childhood. Father and mother living; family history negative. Case was first seen by Dr. A. S. Whittaker, of Biltmore, who advised him to consult a surgeon.

At the age of seven years his parents discovered a bent condition of the bones of the fore left arm, carrying the hand outward. At the time of the discovery of this deformity they observed some very small tumors coming on the fingers of both hands. On account of the position of the hand and forearm and the appearance of the fingers they imagined that it resembled the foreleg of a turtle, and was caused by the mother getting frightened at a turtle during pregnancy. These tumors involved fingers and thumb on both hands, and toes on both feet; however those on the feet were of small size. They grew slowly and gave no pain.

At the age of thirteen the tumors on the little finger of the left hand began to grow very rapidly and gave the patient some pain. Strange to say the boy continued to work, but as

a necessity, as the parents were very poor. One day while chopping wood a small piece flew up and struck him on this enormous growth, causing an abrasion which never healed. This accident occurred just two months prior to the time I saw him.

There were two large sinuses, as shown in the picture, discharging an offensive sero-sanguinous fluid. The tumor was so heavy that he had to carry his hands crossed over and supported by the other arm. He could not raise it to right-angles of the body without assistance. He was very anæmic and was losing weight rapidly. His pulse ran from 120 to 130, and his temperature from 101 to 102. I placed him in the hospital for operation the next day. He had had two or three small hemorrhages recently from the sinues of the tumor, and while the nurse was scrubbing the arm, preparatory for the amputation, there was a sudden and profuse hemorrhage that required quick action to save him from bleeding to death. My diagnosis was multiple chondromata, undergoing sarcomatous degeneration, and the microscope showed it to be a giant cell sarcoma. I amputated above the elbow and the boy left the hospital in ten days. I placed him on an alterative tonic treatment. There seems but little tendency of the chondromata to grow on the other hand and the feet. It is now two years since the operation occurred and no signs of malignancy have occurred. He is in apparently excellent health.

The points of interest in this case are: the extensive involvement of the bones of the fingers and toes, the malignant degeneration of a chondroma, and the advanced stage of the malignancy in these days of progressive surgery.

LIGATION OF THE FEMORAL ARTERY. RESULTS.

BY J. R. PADDISON, M.D., OAK RIDGE, N. C.

In the presentation of this clinical case to the Society I do so not because of any specially wonderful feat having been performed, but purely because of the very great infrequency of this class of cases, and because of the doubtfulness of the final results.

Surgical Anatomy of the Femoral Artery.—I shall briefly refer to the anatomical features of the femoral simply to refresh the minds of many who like myself are not surgeons, and therefore become "rusty" on anatomy:

(a) Position of this blood vessel is best outlined by a line drawn from a point midway between the ant., suf. spinous process of the ilium and the symphysis pubes to the prominent tuberosity on the inner condyle of the femur, having the leg slightly abducted and rotated outward. The upper two-thirds of this line lies over the course of the femoral.

Practically speaking the femoral in the upper half of its course lies in Scrapa's triangle and in the lower half of its course is found in Hunter's canal.

(b) The blood vessel is divided, for convenience sake, into the common femoral, that portion corresponding to about the first two inches below Poupart's ligament, and the superficial femoral which is a continuation of the common femoral.

The largest branch given off from the femoral is the profunda; its point of origin usually being on the outer side of the femoral from one to two inches below Poupart's ligament, and this vessel is of special significance when we are considering the question of ligating the parent trunk.

Report of Case.—Early in the morning of December 18, 1907, I had a "hurry call" to see patient in question. Was informed that patient had been accidentally shot by a dynamite cap, and was perhaps already dead from loss of blood, unless from some cause he had stopped bleeding. Luckily for

the patient the hemorrhage had ceased, due, I think, to the very small surface wound which was so small the blood was dammed back into the surrounding tissues, and firm pressure was brought to bear upon injured vessel by the formation of a firm coagulum. In other words, nature saw if she waited for the doctor the patient would be a "goner," so promptly set to work and applied sufficient pressure to stay the hemorrhage.

History of Case.—K. P., age twenty years; white. Occupation, cook at a lumber camp. Family history, etc., of no importance. I learned that patient had thrown a piece of paper which contained a dynamite cap into the stove to kindle the morning fire. As soon as the fire blazed up the cap exploded, a portion of same entering patient's thigh squarely over the femoral and two inches below Poupart's ligament.

Hemorrhage had been very profuse, and patient showed signs, though slight, of shock; yet I found pulse really better than I had anticipated.

Upon examination of wound I found a small opening at the point above mentioned. The piece of brass had ranged slightly downward and inward, and because of the irregular outline of piece of brass it had caused more or less laceration of subcutaneous tissue.

The immediate and surrounding tissue was ecchymotic and distended. Considering the profuse hemorrhage, the dangerous locality of wound, the absence of hemorrhage at present time and the comparatively good condition of patient, I decided upon the following course: (1) Bandage limb comfortably and have patient remain absolutely quiet until my return; (2) to have an older and wiser head in consultation with me upon my return.

At 2 p. m., about eight hours after injury, I returned to my patient and was met there by my esteemed friend, Dr. H. T. Bahnson, of this city. After going over the case thoroughly we decided to open up the wound. First, to ligate any important blood vessel, if need be, to prevent subsequent

hemorrhage; and, secondly, to remove the piece of brass which had caused the trouble. We cut down over the femoral, making an incision about three inches long, and our findings were vastly more than I had anticipated, for I hardly expected an injury to the femoral because I did not believe this vessel could be opened and yet there be a spontaneous cessation of the hemorrhage. We had hardly started through the firm coagulum when it seemed we had struck an everlasting spring of bright red blood, but knew only too well that this spring would last but a very short time unless stopped quickly. Both Dr. Bahnson and I worked like Trojans for a few moments under very great difficulties and disadvantages, for our field of operation was simply obliterated by the profuse outpouring of blood. However, by strong pressure upon femoral under Poupart's ligament, the hemorrhage was stayed until the field was somewhat cleared, and the femoral securely ligated about two or two and one-half inches below Poupart's ligament.

The loss of blood had been great and the patient was manifesting this fact. The anesthetic was discontinued; the wound swabbed out with pure alcohol, no further search being made for the bit of brass in the tissue, and the wound quickly closed. The usual line of treatment was given patient to overcome shock. I instructed his nurse to keep the limb warm with hot blankets and hot water bottles if need be. Patient began improving and was able to be out in about ten days. Collateral circulation was rapidly established, I presume, the patient never complaining of anything but a slight numbness of limb for a few days. The patient tells me that he suffers no inconvenience whatever with the limb.

This case presented many surprises to me, but none greater than the one of last week when I examined the case for the first time since the patient was discharged. To my surprise I could detect no pulsation on injured side at Poupart's ligament. Continuing the examination I could easily trace a round cord from point of ligation upward to Poupart's ligament, which I believe is nothing more or less than the obliterated femoral.

Well, where does he get his circulation for that leg, did you say? Maybe the Lord knows! I am quite sure I don't, unless this is one of those cases in which the profunda arises abnormally high, or unless the collateral circulation is of much more moment in this part of the body than is usually thought.

In conclusion, I wish to say, gentlemen of the Society, that the case is to me very unique and has caused me to ponder and wonder many times; and while I am not able to clearly figure out all the points in the case to my entire satisfaction, would like to say I will feel amply repaid if the report of this case, in this simple manner, will at any future time be of any aid and assistance to a brother physician when dealing with the subject of femoral ligation.

ENDOANEURISMORRHAPHY.

BY THOMAS M. GREEN, M.D., WILMINGTON, N. C.

Dr. Rudolph Matas, of New Orleans, first called attention to the operation of endoaneurismorrhaphy, or intrasaccular suture of the blood vessel orifices entering an aneurismal sac, as a distinct method of treating aneurisms, at the meeting of the American Medical Association in Albany, 1902. He reported at that time five cases which he had operated on by that method.

His first use of the method of intrasaccular closure of the orifices entering the sac was in 1888, by operating on a brachial aneurism, being forced to abandon the attempt at total extirpation of the sac, owing to the danger of injuring the ulna and median nerves which were incorporated in the walls of the sac.

In 1906 he again reported at the fifty-seventh annual session of the American Medical Association thirty-four cases operated on by this method, by twenty-one American operators. There seems to have been a great deal of confusion as to just what the operation consists of. Matas divides the procedures, according to the character of the aneurism, into three classes:

1. The obliterative endoaneurismorrhaphy, which consists in opening the sac freely, turning out the blood clots and suturing all the orifices entering the sac, thus securing permanent hemostasis and permanently stopping all access of blood to the sac. The walls of the sac are enfolded upon themselves so as to obliterate the cavity. Indications for application of this method are all aneurisms in which the sac is of a fusiform type, in which there are two or more orifices of supply and in which the parent artery is entirely lost as the seat of the aneurismal sac by blending with the walls of the sac through its circumference.

2. Restorative endoaneurismorrhaphy is solely applicable to the sacciform type of aneurism, in which the parent artery retains its normal continuity and outline, with the aneurismal sac apparently engrafted upon it and communicating with it by a single orifice. In this type the sac is opened, clots removed and washed out, and the opening from the sac into the parent artery is exposed. The sutures are placed so as to penetrate all the coats of the sac at the margins of this orifice. The flow of blood into the sac is thus permanently prevented and the lumen of the parent artery remains patulous, the arterial stream being deflected through its normal course. The sac is then obliterated as in the preceding method.

3. The reconstructive endoaneurismorrhaphy consists in reconstructing the vessels from the walls of the aneurismal sac, and is applicable only in those forms of fusiform aneurism in which the coats of the sac are firm, elastic and resistant, and the two openings, one above and one below, leading into the main artery lie on the same level in close proximity, and are situated at the bottom of an easily accessible aneurismal sac. This is accomplished by inserting a small rubber catheter into the two openings of the vessel and suturing the sac over this. The catheter is removed before the last stitches are tied; leaving behind the reconstructed channel of the vessel corresponding to the outline of the normal channel. The orifices of any collaterals entering the sac may be sutured if they be present, and the sac then enfolded on itself as in the preceding methods. It is perhaps rare that we find aneurismal sacs that are amenable to this form of treatment.

Matas, in his last report at the recent meeting of the American Medical Association in Chicago, reports eighty-five cases of aneurisms operated upon by his method, fifty-nine of which were obliterative; thirteen restorative, and thirteen reconstructive. Since reading his paper he has discovered eight other operations, all of which were done in Chicago, and all of which were successful; but I am unable to classify them, as

he gave me no further details. This would make a grand total of ninety-three cases operated on in six years.

However, I shall not include the last eight cases in the following discussion, for a lack of detail. The eighty-five operations above referred to were performed by fifty-two different operators, forty-nine of whom were Americans, representing nineteen States; and three of whom were foreign surgeons, representing Canada, Spain and Italy. Nor does this list include arterio-venous aneurisms. In the eighty-five cases there were seventy-eight recoveries and seven post-operative deaths.

Dr. Matas, in referring to these seven deaths, does not think that more than two of them should be charged to the operative procedure, or at least as direct post-operative sequence; thus his mortality would be reduced to 2.3 per cent. Secondary hemorrhage occurred in 2.3 per cent; gangrene in 4.6 per cent.

Upon investigation of the bad results he finds that, in most of them, it was attributable to inexperience with the method and bad judgment in the operative procedure.

Of these eighty-five cases the anatomical distribution was as follows:

Abdominal aorta	2	External Carotid	1
External Iliac	1	Subclavian	1
Gluteal	1	Subclavio-Axillary	2
Ilio-Femoral	5	Axillary	1
Femoral	18	Brachial	2
Popliteal	50		
Posterior Tibial	1	Total	85

Relapses occurred only in the reconstructive cases: four in thirteen cases, or 28.09 per cent. In one of these the aneurism was cured by a secondary obliterative procedure, and in two of the other three it could have readily been effected in the same way. In only one case were the local conditions unfavorable for secondary obliterative procedure.

The feature of this operative procedure which appeals to me as most important to the successful carrying out of one of

the three methods just described, is that of procuring complete hemostasis before attacking the aneurismal sac, and this, while simple, when the aneurism is situated in the extremities, permitting the use of a tourniquet, becomes a very serious problem as we approach the root of the limb, or the neck, for it is not only the temporary ligature of the vessel from which the aneurism springs above and below the sac, but the control of the collateral circulation to the sac, which is desired as well. A surgeon must seek the large arterial channel well above the aneurism, which supplies the entire field, and here apply his temporary ligature. He is then enabled to occlude the entire source of blood supply to the sac, and spares himself the horror of a most formidable and sometimes fatal hemorrhage from these collaterals to the sac upon incising the aneurism. This applies, especially, in the ilio-femoral, iliac, axillary, brachial and subclavian aneurisms. In carotid aneurisms one has further to consider the secondary effect of blood supply by collateral circulation to the brain. Here it is best to test the efficiency of the collateral circulation before attempting any operative procedure. Indeed, that is one of the great questions to decide before attempting any operative procedure upon any aneurismal sac, and especially so in the old or sclerotic subjects. We must have some method of occluding the blood to the sac for forty-eight hours in order to enable us to decide whether there is sufficient collateral circulation or likelihood of such being established, and that our operative procedure will not be followed by gangrene of dependent parts. Among the methods for furthering this investigation are the aluminum bands of Halstead, Criles clamps, and the protected ligature of Jordan and Doberauer.

Matas, himself, has suggested a simple silver wire band with a metal clip to hold the wires together in parallel roads.

There still remains the danger of embolism upon the removal of any of these devices. Matas suggests that the determining of the blood pressure in the very tips of the extremities after compression of the main trunk above the aneu-

rism may prove the final solution of the problem; that is, if the manometer show a more or less sustained peripheral blood pressure an operation is justifiable. If, however, the manometer registers zero, we have a positive indication of want of collateral circulation, and a positive contra-indication for any operative procedure.

Summary.

It is my belief that the intrasaccular method of treating aneurisms, when judiciously applied, offers the best results of any operative procedure. The obliterative operation is far superior to any method of ligature, for the reason that we permanently close all the openings entering the sac by sight, and permanently obliterate the sac itself, while at the same time it evacuates the contents of the swollen sac and relieves the œdema of the limb, thus bettering the chances of establishment of collateral circulation to the parts below. The ligature method often fails, because it does not control the collaterals to the sac.

That it has a distinct advantage over the method of ligature with total extirpation is obvious, because it does not interfere with that collateral circulation to the parts below, which has been more or less already established, or to the establishment of collateral circulation later.

Again, it is often most difficult, indeed impossible, to dissect an aneurismal sac free from the neighboring veins and structures, without permanent injury to them.

The advantages of the restorative operation are more brilliant still, since it leaves a blood channel in its normal condition. There is no method of treatment of a saccular aneurism which can be compared to the restorative operation. Matas says that is an obligate surgical procedure.

The question as to the advantages of the reconstructive operation is still in its infancy, and offers a field of much promise. It is hard to understand why the same original causes operating to produce an aneurismal sac at a local point, unless it be a traumatic aneurism, would not continue

to be present and produce a recurrence of such an aneurism, although a reconstructive operation was for the time successful. However, it may be that after all, in these cases of the successful reconstructive operations, the success was due, not so much to reconstructing the vessel at the point where the aneurism occurred, so that it could withstand the intravascular tension, but to the fact that sufficient collateral circulation had already been established to nourish the dependent parts before the operation was attempted. At least, sufficient blood was carried by this collateral circulation to almost nourish the parts, and the reconstructed vessel played a secondary part in maintaining the circulation of the parts.

This has been clearly demonstrated to my mind by the fact that three cases were first operated on by the reconstructive method, and later, when the obliterative method was instituted to cure a recurrence, sufficient collateral circulation to the dependent parts was readily shown.

Halstead claims that in old and sclerotic subjects, where there is doubt of collateral circulation being established after obliterating an aneurismal sac, a better method would be to apply a slow and gradual obliteration of the main trunk above the sac, in order to permit collateral circulation to form gradually.

If my idea of the reaction of the circulation after a reconstructive operation is a correct one, why then shouldn't such an operation, which does not occlude, but largely preserves the lumen of the main trunk while the collaterals are forming, even though it might necessitate a secondary obliterative procedure, be a safer plan? I do not wish to decry the brilliant results obtained in those cases of reconstructive operation which have proven to be successful, but it is well to know whether the original channel of blood still is the chief source of arterial supply, or whether it is acting in unison with the collateral circulation, but occupying a secondary position.

With our better understanding of the pathological be-

havior and reaction, and reparative processes of the endothelial lining of the vascular system. * * *

My case in question was one of a large femoral aneurism occurring in an octoroon, age forty-six, in whose history we could find nothing of interest bearing on his condition. The physical examination showed nothing further than an interstitial nephritis, with increased arterial tension. The aneurism was about the size of a large orange, extending from the beginning of Hunter's Canal upward in Scarper's triangle; fusiform in type. Complete hemostasis was secured with a tourniquet, and the sac incised throughout its length. It was found to have two openings: one above, one below; not suitable for the reconstructive procedure because these openings gradually merged in a funnel-like manner into the walls of the sac; the walls of the sac being thin and friable. I therefore closed both openings with catgut suture, and drained the sac with a cigarette drain, without enfolding its walls. My object in so doing was to save as much time as possible, owing to the man's general condition; and further, to the fact that the sac walls were so friable that the stitches placed to bring about enfolding would not hold. Recovery was uneventful, pulsation in the dorsalis pedis artery being apparent at once, showing that it had been established previous to the operation, and in forty-eight hours it was apparent in the posterior tibial. The patient is now up and at his occupation as a steward on a river boat.

I am much indebted to Dr. C. H. Lavinder, of the Marine Hospital Service, of Wilmington, N. C., through whose kindness this case was referred to me; and especially am I indebted to Dr. Rudoph Matas for a copy of his manuscript which he read at the recent meeting of the American Medical Association in Chicago. Indeed, this effort is largely a repetition of his various communications upon this subject in the past six years.

ABSCESS OF THE BRAIN.

BY R. G. BUCKNER, M.D., ASHEVILLE, N. C.

Abscess of the brain is a focal suppurative inflammation of either or both the grey and white matter.

Etiology.—It is always secondary and dependent upon the intracranial invasion of micro-organism from remote sources; any one of the pus-producing micro-organisms being sufficient cause. It may occur at any age, but it is more frequent in the second and third decennial, and is very rare in very young children and in old age. It is from three to five times as frequent in males as in females. It is associated, first, with local cranial suppurations; second, with injuries to the head; third, with certain general infections; fourth, with certain local diseases in other parts of the body.

According to Newton Pitt nearly half of all brain abscesses are associated with cranial suppuration, and nearly all of these are due to middle-ear disease. Chronic otitis media is by far a more common cause than the acute form. Jansen's analytical study of several thousand cases established the fact that the proportion is more than six to one; other observers have put it four to one. Other cranial suppurations sometimes followed by abscess in a causative relation are to be found in the frontal sinus, the ethnoid cells, the antrum, the orbit and the nose and throat. Practically all cases occurring in very young children are due to trauma or middle-ear disease.

L. E. Holt, in the Archives of Pediatrics, March, 1908, gives the following study of thirty-two cases:

1. That abscess of the brain in children under five years is rare; (2) that the principal causes are otitis and traumatism; (3) it rarely follows acute otitis, most often neglected cases, and is surely secondary to diseases of the petrous bone; (4) in the cases occurring in infancy, without evident cause,

the source of infection is probably the ear, even though there be no discharge; (5) the development of abscess after injury to the head without fracture of the skull is extremely rare. In nearly all the traumatic cases definite cerebral symptoms show themselves within the first two weeks after the injury. In cases of falls as remote as several months there is probably some other cause as a latent otitis.

Among the general infections most liable to become complicated with abscess of the brain are pyemia, tubercle, influenza, enteric fever, variola and erysipelas. Since pyemia is well on its way to becoming extinct, it is not so frequent a cause.

"It is of great interest that cases of abscess of the brain have been met with apart from any other microscopic intracranial tubercular lesions which have yielded pure cultures of the tubercle bacillus" (Ballance).

Dr. Bristow in 1891 published two cases following influenza without middle-ear disease. Among local diseases in other parts of the body is putrid inflammation or gangrene of the lungs, suppurating cervicle glands and foci of suppuration of the liver, fallopian tubes, and at the seat wounds. An instance illustrating the last is reported by Surgeon-General Turner, U. S. A., in the *New York Medical Journal,* March 14, 1891, of the sudden death of a soldier who was considered to be in perfect health, the autopsy showing a multiple abscess of the left frontal lobe; the man at the time of his death was reclining on a bench reading a newspaper. A few weeks previously he had received a gunshot flesh wound of the arm in an engagement with robbers, which had healed readily, the bone not being injured. The abscess could not be traced to anything other than the injury of the arm, though there was not a single symptom, mental or physical, suggesting its presence.

Brain abscess occurring after gangrene of the lung has been observed and recorded at least fifty years. Though it is evident that the infection is carried in the blood stream, no

adequate explanation as to why it should be localized in the brain has been given. In 1901 Claytor collected reports of fifty-eight cases secondary to diseases of the lungs, nearly all of which occurred in the left side of the brain. In twenty of the cases the lung disease was bronchiectasis; in ten empyema; in nine purulent bronchitis; in seven gangrene; in five tuberculous disease; in three abscess of lung; in two pneumonia, and in two gunshot wound of the lung.

Stoll reports a case of abscess in left frontal lobe and a cavity in the apex of the right lung two and one-half inches in diameter.

Blotche found pulmonary pigment in the pus of a certain brain abscess.

In reference to injuries I will only state that, except when the instrument causing the injury has penetrated deeply into the brain substance, the abscess is usually really a local meningeal suppuration with participation of the adjacent brain cortex, a meningo-cortical abscess rather than a brain abscess proper. Occasionally injury leads to chronic disease of the bone from which a brain abscess may arise.

Pathology of Infection.—Infective processes may extend from a focus of cranial disease to the interior by a visible continuous track of diseased bone, or through a foramen or canal for the passage of vessel or nerve, or through congenital defect in the ossification of bone, or along the processes of dura mater which in certain situations dip into the bone, or by entering the circulation. In some injuries infected material is introduced directly into the brain or the cranial cavity, as shown by a stab culture being made. This is the only difference in the pathology of intracranial infection in cases of injury and disease. The infective process spreads more or less rapidly from the spot where the dura has been brought in contact with the infected material. Here the dura becomes inflamed and extra-dural suppuration occurs. This is the first state of intracranial infection, and further extension may be prolonged on account of the great resistance

of the dura, and upon this depends the extent of the localized extra-dural abscess. The dura may be softened and perforated immediately with only a few drops of pus collected between it and the bone. The resistance of the dura is illustrated by Bergmann's case. On April 2d a man was admitted to the hospital with middle-ear disease. On irrigation of the ear until it was quite free from pus the auditory canal was rapidly refilled to overflowing, and a mastoid operation done on March 12th. The following day when dressing and inspecting a fistulus track was detected. This was enlarged with a sharp spoon. There was a recurrence of symptoms. On April 11th a free opening was made by chiseling away considerable bone, thus freely opening the extra dural abscess. From that time recovery was uninterrupted. Pus evidently had been in contact with the dura for probably more than nine weeks, but no perforation had taken place. When the infection traverses the arachnoid and reaches the subarachnoid space and the pia there will be either a localized or a diffused inflammation, the extent depending on the virulency of the infection.

The infection in disease of the cranial bones is by direct continuity in the continuous track of diseased bones. In a rapidly extending infective process diffuse meningitis would be the most probable result; in the more slowly spreading infections resulting from chronic disease the meningeal affection would be localized by adhesion, and time given for extension of disease to the brain. This is shown by the fact that abscess of the brain or sinus infection is a more common complication of chronic ear disease than is acute suppurative meningitis. In most cases of slowly spreading infection from chronic disease adhesions occur, obliterating the arachnoid space at the site of infection, and binding together the dura, arachnoid, pia and cortex. The lymphatic shields of the numerous small blood vessels which traverse the cortex at right angles to its surface, are in direct communication with the subarachnoid space, and through these as through a number

of capillary tubes infective matter easily traverses the cortex and reaches the white substances. The cortex is very vascular and its connective tissue element is reinforced by numerous folds or promulgations of the pia, and abundantly supplied with the connective tissue corpuscles; hence it is able to offer a strenuous resistance to the bacterial attack and does not usually undergo any extensive destruction. Along this track, traversed by infective material, a barrier of fibrous tissue is formed, limiting the destructive process to the narrow track.

The white substance is much less resistant, because it is nonvascular, and the greater the distance from the cortex the more easily does the bacterial action cause its dissolution. In its incipiency it presents the local appearance of what has been described as acute red softening; the degree of redness depending upon the amount of blood determining to the point. As it advances the pus changes from a reddish yellow to a greenish or greenish yellow color, and in some cases the odor is quite offensive. This abscess comes to assume a mushroom shape with stem attached to the dura at the original site of infection from the bone. When the dura has been separated from the bone over a considerable area, there is a greater extent of adhesion of the meninges. Salzer successfully operated on a case where the tempora-phenoidal dura was separated from the bone over an area as large as a silver dollar, and was in a sloughy condition. The sloughing portion was excised and the meninges were diffused into one layer; the inner portion, formed by the pia, was not necrotic, and there was no abscess of the brain.

Mannasse reported a case in which the infection had proceeded further, and there was abscess of the brain, the outer wall over which a considerable area was formed by fused meninges and cortex. The more recent the abscess the nearer it will lie to the spot where the infection traversed the dura, and the more evident will be the stalk or its remains. The older the abscess the greater is the apparent recession from

the dura and the less evident the stalk. Thus the infection gradually spreads into the brain substance by slow extension in direct continuity from the spot where the disease in the bone reached the interior of skull. Yet infective particles may, in the brain, as in other parts of the body, be carried by circulation to a spot remote from the site of infection. An abscess may thus arise in the substance of the brain without any visible connection with the bone disease to which it really owes its origin. The stalked form of brain abscess compares in its mode of formation to palmer abscess, from which infection in an abrasion of the skin of the palm continues from the superficial area by a narrow track to a focus of disease beneath the deep palmer fascia; and the isolated brain abscess has its parallel in an abscess of liver arising from disease of the intestine.

The explanation of the pathology is not far to seek in a case reported by Swain, in which purulent infection of the choroid plexus in the descending cornu of the lateral ventricle occurred as a result of caries of the tegmen tympani of the same side, the intervening brain substance being unaffected. In rapid increase of the abscess it may lead either into the ventricles or on the surface of the brain.

Encapsulation of abscess in the brain is thought to be relatively more frequent than in other parts of the body. The pathological process is the same, but the peculiar liquid texture of the brain allows a sharper differentiation between the hard tissues forming its wall and the surrounding unaltered brain substance. Acute brain abscesses are sometimes encapsulated, and nearly all chronic abscesses are encapsulated.

In a case of cerebellar abscess, with symptoms pointing to a duration of at least eight months, no capsule is found, but the whole cerebellar hemisphere was nothing but a shell of softened gray matter. As in other parts of the body the latent abscesses may slowly extend and give rise to slight symptoms extending over a considerable period, and encap-

suled. A slowly growing abscess may be regarded as pushing aside fibers passing from the cortex to the internal capsule, rather than destroying them. This inference is supported by the fact that recovery from paralysis takes place after successful drainage of the abscess, yet it should be remembered that cortical impulses may find new paths.

When an abscess is drained through the stalk, as in the case of tempora-sphenoidal abscess opened through the tegmen, though it may be large, there may be but little actual damage to the cortex. A thick capsule does not prevent the abscess from extending, nor even from leaking into the ventricle. It is a fact, also, that acute inflammatory softenings, or even suppurations, have been known to arise around an encapsuled abscess. Abscesses in thick capsules, which can be shelled out whole, have run a chronic course. Complete encapsulation of the stalk form does occur, the narrow track of communication being obliterated by scar tissue. In such cases the capsule was found to be adhered to the bone.

When an abscess is found in the brain completely isolated and at some distance from the meninges the infective organisms have been carried by the blood or lymph stream, and have multiplied at a spot some distance from the original point of infection. Many such cases have resulted from injury without bone disease, a considerable number having followed gunshot wounds. The complications usually found are phlebitis and thrombosis of the lateral and the superior petrosal sinus, lepto-meningitis, extensive meningo-encephalitis and purulent pachy-meningitis, lepto-meningitis and sinus thrombosis being especially common in cases of aural disease.

Streptococcus pyogenes albus, staphylococcus cereus flavus, and the bacterium vulgarus, Charcot and Leyden cystals and streptothrix have been found in pus from cerebral abscess.

Spontaneous recovery in certain tubercular cases has been claimed by competent observers. Inspissation, and even calcification of the brain abscess has been observed, but only in tuberculous cases. It is stated by Ballance that cases are

relatively common in early life, which either get well or run a chronic course, extending over many years, and then die from distention of the ventricles; and the only explanation of the symptoms can be given by inferring the presence of cerebral tumor, or of meningitis. In these cases it seemed probable that there was a local tuberculous mass in the brain from which recovery had come. In one such case, some four years after a diagnosis of cerebral tumor had been made, the autopsy showed great distention of the ventricle. There was no visible tumor and no evident trace of tubercle in the brain. But in the mesentery there was a large calcareous mass.

Two girls under twenty years of age, both suffering from headache, vertigo, mystagmus and repeated purposeless vomiting; both had double optic neuritis, unsteady gait, and absence of the patellar reflex. The diagnosis in both cases was some affection below the tentorium, probably tumor; both made good recoveries, but in one some impairment of sight remained.

Abscess of the brain is commonly single. MacEwen says 93 per cent of abscesses from injury are single. In pyemia they are usually multiple. A second abscess occurs in the frontal and occipital lobe occasionally, and even more often in the tempora-sphenoidal lobe.

Symptoms.—These may be broadly divided into general and focal symptoms. Among the former are headache, photophobia, slow cerebration, slow pulse, subnormal temperature, occasional chills, foul breath, deathly pallor of the skin, constipation, facial palsy of the peripheral type, optic neuritis, impaired vision, conjugate deviation of the eyes, stabile pupil, mystagmus. The mental state is very likely to be mistaken. In order to estimate exactly it is well to know the mental capacity of the patient. A condition of excitement and talkativeness in a person who is reserved and stolid is of much more importance than in an excitable and loquacious individual. Also apathy and stupor in a man of bright, active intelligence is of greater diagnostic value than in one who

is dull and stupid. These variations in the mental state are observed also in a sinus thrombosis, meningitis and tumor.

Headache is a variable symptom, there being few cases recorded in which it was never noted, and other cases in which it was not a very marked symptom until late in the disease, and still other cases in which it occurred at different times, but was never severe, and still other cases in which it was the chief symptom.

The course of the temperature is also quite variable. MacEwen points out that it is common in abscess of the brain to find a persistently low temperature with little variation, and that during the preliminary period it is usually slightly above normal. During the period of full development of the abscess it is about normal, or slightly subnormal, from 97 to 99 F.; and in the terminal stage if the abscess burst the temperature rises within a few hours in a bound to 105 F.; but if it is evacuated by operation it rises to about 101 F., and in a few hours falls below 100 F., remaining around normal until recovery. Okada found a marked rise of temperature and febrile course in forty-six out of eighty-eight cases of abscess of cerebellum. In fifteen the temperature was normal, and in fifteen it was subnormal. In eight there was a rise of temperature only at the onset, and in four only at the very end.

Rapid emaciation, the cachectic appearance, with sallow skin and evidences of the septic state, and other above-described symptoms, suggest latent abscess.

Optic neuritis is a valuable sign when taken with other symptoms. In Okada's cases, two-thirds of his patients had optic neuritis in one or both eyes. In groups reported by other observers, it occurs in 30 per cent of the cases, but it occurs also in brain tumor, meningitis and sinus thrombosis.

The following localizing symptoms should be taken into account: motor aphasia, optical aphasia, hemianopsia, hemianesthisia, and weakness of the arm and leg, vertigo, ataxia, with purposeless vomiting, lying prone on the side of the lesion, or falling toward the side of lesion, etc.

Careful observation and record of the case for a sufficient period of time should be made. In this way an undoubted diagnosis may be made in most cases. Yet a few diagnoses will remain to be made post-mortem. There is wide difference in the clinical course of cases on account of the suppurative process varying within the wide limits in its virulency and local destructive effects. Five types of clinical evolution have been described by French authorities:

1. A subacute evolution more or less distinctly divided into three stages, with an initial febrile state characteristic of septic infection; headache, vomiting and fever. This stage may be confused with specific fever. It lasts a variable number of days, and is the stage of suppuration. The second state is that of remission. Sometimes suddenly but more often gradually, the symptoms abate and give place to a calm which is deceptive and prolonged; and during this stage there are few or no manifest symptoms. Yet, when the abscess is in the cerebellum ,there will be some emaciation and impairment of the general health, and thorough examination would reveal some pathognomonic localizing sign. The third, or paralytic stage supervenes suddenly, with or without convulsions. This may pass into profound coma, terminating fatally in a few hours, or recovery from the convulsive seizure may take the place of symptoms localizing the lesion. With the onset of the third stage there is generally a rising temperature. The rapidly fatal cases are usually from rupture of the abscess. The others have a more or less rapid extension of the suppuration. (See Organic Nervous Diseases, by Starr, page 571, describing case of middle ear disease.)

2. *Evolution with Severe General Infection.*—These cases are rapidly fatal, the abscess symptoms being merged into those of grave general infection. High fever and delirious mania are prominent symptoms.

3. *Evolution with Complete Latency Until the Final Attack or Coma.*—The patient dying suddenly or in a few hours, and an abscess that has existed usually for a long period is

found at the autopsy. In some such cases death is absolutely sudden. The abscess in such cases may be found in the frontal lobe or in the outer region of the occipital lobe, and even more frequently in the right temporal lobe. In these silent cases an examination of the optic nerve head, the field of vision, and the action of the muscles of the eye has revealed the gravity of an illness which has been regarded as trivial.

4. In the fourth type of clinical evolution, the course is just like that of brain tumor.

5. The fifth type of evolution is remittent, the course being in two acts. The first is marked sometimes by headache and fever, sometimes by an attack of mania, and sometimes by acute delirium; then all quiets down and the patient seems cured; but after a few weeks or months, or even a year, there is a recurrence of symptoms which is quickly fatal. Bristow's influenza cases, previously referred to, are examples of this type of evolution. In localizing the abscess the position of the injury causing, or the cranial suppuration from which it originated, have some bearing.

Unilateral spasms, paralysis, hemianopsy, and aphasia are important symptoms in determining the exact location of the abscess. In locating temporal abscess a certain form of aphasia that has recently been observed promises to be very helpful. The memory centers for hearing are located in the first and second temporal convolutions. The relative degree of development of these vary in individuals of different degrees of education. The memory centers of sight are located in the angular gyrus and calcarine fissure. The centers in these two areas are connected by association fibers passing through the white matter beneath the cortex. Deep abscess in the left temporal lobe destroys or displaces these fibers, preventing communication. If you say the word knife, the patient can repeat it, but can not form any notion of what it represents any more than from a word of a foreign language. If you show him a knife he can say it is what you cut with, but he can not recall the word knife. This is called optical

aphasia, or intercortical sensory aphasia. By this symptom diagnosis of abscess in the left temporal lobe was made and verified by operation. In any suspected case this symptom should be looked for, but it is useful only in locating the abscess on the left side of right-handed people, and in the right side of left-handed people.

Conjugate deviation of the eyes shows irritation when toward the side of the lesion, and paralysis when from the side of the lesion.

Diagnosis.—The diagnosis of brain abscess may be made without great difficulty in ordinary traumatic cases, for there is history of the injury and the exact location and development of a series of cerebral symptoms pointing to localized disease in the brain. Nervous symptoms coincide with the location of the wound, and the localization of the cerebral disease, and the existence of the abscess is reasonably certain. When there is no history of an injury the diagnosis is more difficult, because acute tuberculosis gives the same symptom complex. Cases of brain abscess from otitis media must sometimes be distinguished from meningitis and thrombosis of the lateral sinus. The relative frequency of these conditions are not far from the same.

Poulen collected thirty-six cases of cerebral complications of ear disease. Thirteen of these were abscess, twelve were thrombosis, and eleven meningitis. In meningitis there is usually a more rapid onset and progress of the symptoms than in abscess. The headache is more severe. There is hyperesthesia to sound and light and touch all over the body, these being absent in abscess, the temperature is high and rarely ever goes below normal. The pulse is rapid, irregular and intermittent. There are occasional twitchings of the limbs. or slight convulsions; strabismus appears early, trismus is common, pain and rigidity of the neck are present, micro organisms are to be found in the cerebro-spinal fluid.

In thrombosis of the lateral sinus there will be high fever with septic variations in range, and frequent chills. In the

course of twenty-four hours the temperature may twice sink below normal and rise to 105 F. The pulse is rapid and irregular, but not intermittent. There may be tenderness, swelling and œdema over the mastoid, and œdema of the neck. The jugular vein may stand out as a hard, blue cord on the side of the neck.

The diagnosis of abscess arising under other conditions is never positive. The presence of a cause, and a record of cerebral symptoms that occur in a definite series of stages point strongly to presence of an abscess.

Prognosis.—This will depend upon the possibility of evacuating the abscess and draining it successfully. Spontaneous recovery has been recorded, but this is so rare as never to justify waiting.

Necrosis and caries of the tegumen was so great in one of two cases of tempora-sphenoidal abscess as to allow them to spontaneously drain freely and successfully. This occurred just as it has done in a few cases of suppurating appendix. Starr reports a collection of fifty-five cases operated. Twenty-four were after injuries, twenty-four after middle ear disease, and three after typhoid. Thirty-four recovered, and twenty-one died.

In a group of sixty cases of traumatic abscess operated, thirty-eight recovered, twenty-two died. In a collection of one hundred and ninety-six otitic abscesses operated, ninety-six recovered.

Deuch operated on nine cases and three recovered. Barnhill operated on eight cases, two of which were alive and appeared to be cured four years afterwards, and one of the others died of a recurrence four months after the operation.

One swallow doesn't make a summer, and even if death followed every operation in a *small* group of cases, who could have the temerity to question the true spirit of surgery in an effort to evacuate and drain *all* of them.

As far back as July, 1905, Korner reported ninety-two operations with fifty-seven recoveries, and twenty-nine cases

of sinus thrombosis with forty-one recoveries. It is more than probable that part of the cases in which recovery does not occur, the operation had been too long delayed, or was not sufficiently exploratory.

Treatment.

1. *General Considerations.*—An abscess in the brain should be dealt with just as with abscess in other parts of the body—that is, by incision and thorough drainage, and if encapsulated, enucleation.

In operating the surgeon must find out as he goes its situation, and whether acute or chronic, diffused or circumscribed, or whether there be a second one. A case of acute cerebellar abscess, opened with relief to the symptoms, died, and at necropsy an old encapsuled abscess was found still further in.

When the abscess is drained, the brain tissue, which is of liquid texture, tends to fill the space, and shut off a portion of the cavity from the point of incision.

The integrity of certain parts of the brain is essential to the continuance of life, and places a limit to surgical interference in certain directions.

These general considerations do not affect the principles of treatment, but have important bearing upon the details of the operation.

2. *Operation for Brain Abscess Following Local Cranial Disease.*—The operation for brain abscess should be a direct continuation of that for the removal of the continuous track of diseased bone through which the infection spreads. This track must be followed through the bone to the interior of the skull.

If after a mastoid operation, or Stake's operation for necrosis of bone in the tympanum, the symptoms point clearly to abscess in the cerebellum, or tempora-sphenoidal lobe, the surgeon should work his way, in the one case from the inner, or posterior wall of the antrum to the posterior surface of the petrous, or through the roof of the tympanum.

Enough of the petrous and squama must be removed to expose the extra-dural abscess, or the diseased portion of dura to which the brain abscess is attached by its stalk. By this method it is known whether the abscess has a stalk, or is isolated. This stalk is a ready-made drainage tube, and is less liable to be closed from the liquid consistence of the brain than one made by the surgeon, also infection of the meninges is far less likely, as well as hernia cerebri.

In cerebellar abscess, the stalk is attached to the dura over the sinus groove, or over the aqueductes vestibuli, or over the internal auditory meatus. In tempora-sphenoidal abscess, it is over the anterior surface of the petrous, most commonly over the tegumen.

Frontal abscess is attached to the cranial wall of the sinus, or the anterior surface of petrous.

In deep abscess following an injury the stalk is attached over the region of the fracture. Drainage through the stalk would remove the symptoms and tendency to death, but there are cases that will require a counter opening, as in other parts of the body. To do this, remove a considerable area of bone, *open the dura* and pack with gauze until this area of the brain for incision is walled off by adhesions. This avoids diffuse encephalitis and meningitis. The area of bone removed should be in proportion to size of abscess as determined by probe through the stalk.

If respiration ceases the abscess must be evacuated in the shortest time and easiest way, and the local bone disease let alone for the time being.

Mr. Ballance, on two occasions, completed the operations during the performance of artificial respiration, made necessary by the first few inhalations of chloroform. Also in another, in which artificial respiration had been in progress two hours before he arrived. And he insists that neither morphia nor strychnia should be administered before the dura has been opened.

3. *Discovery and Incision of Abscess.*—The abscess may

burst when the dura is opened, and pus may be projected more than two feet. When sufficient opening through bone and dura and bone is made, palpation may show it to be immediately subcortical. Incision through the cortex may be made, with great care to avoid wounding any of the numerous vessels. The best instrument for exploration is a sharp pointed long, narrow knife, and it should be borne in mind that the abscess is nearly always close to the bone disease giving rise to it. Clean cut wounds heal quickly, and it is easier to find the abscess with the knife.

The trocar and canulla have missed the abscess, or passed through without tapping it, or struck the capsule and failed to penetrate it. Dupuytren, in one of his lectures, says: "In certain cases of deeply seated fluid collections, we must incise the dura and arachnoid and brain itself, and by this bold proceeding, patients have been saved." In the same lecture further on he continued: "Relying also on the success of J. L. Petit, Boyer concurs in the advice of Quesnay, and does not fear to plunge the bistoury quite deeply into the very substance of the brain in order to evacuate traumatic effusions, and it has fallen to my lot several times to do so with success." Fifty years later an English surgeon wrote: "There are few surgeons who would have the hardihood of Dupuytren, who plunged a bistoury in the substance of the brain, and thus luckily relieved the patient of an abscess in this situation." In his account of this Dupuytren says: "I incised the dura, nothing came out; I thrust the bistoury cautiously into the brain and there welled up immediately a flood of pus! That very night all the symptoms disappeared, and the patient recovered." If the knife failed to find the abscess, it is quite easy to find it with the finger, as a tense, abnormal swelling, which may be opened by the knife, guided and guarded by the finger. A second abscess may be mistaken for the tentorium.

In two cerebellar cases, one abscess in one and two in the other, were drained, and yet both patients died from an un-

opened, oyster-shaped abscess just beneath the cortex of the upper surface.

Progress of the Case.—The course of brain abscess is variable. The earlier the operation is done the greater the chance of recovery. There should never be delay after diagnosis is made, and the operation should always be done unless the patient is actually moribund.

The operation has been done during artificial respiration and the patient recovered.

After the operation the patient may rapidly convalesence, or present symptoms which will tax to the utmost the resources of the surgeon. A voracious appetite is a favorable sign.

Less than a generation ago but few surgeons ever attempted to operate for brain abscess. During the last twenty years recoveries achieved make the future of this field bright with promise.

AEROSTATIC DEAFNESS.

BY W. PERRY REAVES, M.D., GREENSBORO, N. C.

Aerostatic deafness has for its etiology a disturbance of the aerostatic equilibrium of the middle ear and its pathological sequelæ.

At the meeting of the North Carolina Medical Society last June, I read a paper entitled, "Why is the Middle Ear an Accessory Cavity of the Upper Respiratory Tract, Which Often Becomes the Etiological Headquarters of Otitis Media and Acquired Deafness?" This paper is really a continuation or second chapter of the other paper, discussing more fully intermittent, remittent and continued deafness, which terms I have used in the reverse order of the fever classification, both in order and meaning, the fever going above normal, the hearing below. I hope that you who are so familiar with these terms will use the same cue and play acoustics with me for a while instead of fevers. I am going to strike at the basic fundamental truths of this subject, in order that we may all reason together. It is not necessary for one to have made a special study of otology to arrive at a logical conclusion, for the fundamental truths are the same in every branch of medicine. When we know the anatomical topography and the physiological function, then we reason that any deviation from the normal should be considered an etiological factor that may produce a pathological condition.

How are we to arrive at our diagnosis, by symptoms, or inspection and investigation? Both methods are essential. The symptoms cause the patient to seek his physician for relief. The history of these symptoms is not diagnostic, as a rule, but should suggest that inspection and investigation of the disturbed acoustic apparatus, by himself or a specialist, is necessary to determine the cause; then its removal will give relief and hasten the day when this form of deafness will cease to be charged to heredity, because some of their ances-

This cut shows the normal position of the drum and ossicles. Their mechanical correctness so that the incus moves the stapes at a right angle to its long axis, permitting its free easy and quick motion.

This cut shows the tube not ventilating, drum retracted and fixed, handle of malleus pushed in, head of malleus pushed outward and upward, the suspensory ligament put on a stretch. The top of the incus is lifted upward and outward with the head of the malleus. The stapes is lifted up at its outer part, which pushes stapes in at the upper part of the fenestra ovalis and pulling it out below, practically locking the ossicular chain.

tors were deaf. If we find, by examination, aerostatic disturbance, signs of pathological conditions, which are catarrhal attacks, and the etiological cause, then the diagnosis is clear, the treatment unmistakable.

I shall treat this subject from a common-sense clinical viewpoint, with report of just enough cases to make my meaning clear, rather than give a scientific review of the literature on the subject. I shall use the same definition of deafness as in my previous paper, "Intermittent deafness is a temporary impairment of the hearing that returns to normal when the cause is removed." Therefore, there can not be any permanent pathological lesions; the cause is usually want of ventilation of the middle ear, congestion of its mucous membrane, with or without muco-serum in the tympanic cavity.

Case 1.—Male; age, 4. Referred to me by Dr. Turner for operation. History of symptoms for past month: Had head and chest colds, intermittent earaches, and was at times inattentive, which means intermittent deafness, breathes through his mouth at night, snores, wakes frequently, throws cover off and gets up in bed, sometimes cries with ears; condition exaggerated when he had fresh cold, as in past week, with two or three degrees of fever. Inspection showed drum retracted in right ear, and distended with serum in left, nares patulous and secreting freely, breathing mostly through the mouth, V-shaped arch, right faucial tonsil large enough to clip, left small. Investigation of digital examination of nasopharynx, large adenoid. Have we not the three primary conditions upon which to make a diagnosis? Right ear drum contracted, showing that tube is obstructed and the air is being absorbed; left ear drum has been retracted because of partial or complete vacuum in the ear, causing a pouring out of serum, demonstrating, at first, an aerostatic disturbance, and, second, a subacute catarrhal condition; third, or etiological cause, adenoids; exciting cause, the changeable winter months upon a weak constitution. Having taken the symptoms and the work up to the etiological factor, now let us take the etio-

logical factor and check up the symptoms and see if our logic is good. The adenoid, especially when congested, plus the secretion in the nasopharynx makes nasal breathing difficult, mouth breathing is necessary, and the upper respiratory tract is functionless; the middle ear, which is an accessory cavity of the upper respiratory tract, must suffer for lack of perfect ventilation; but this is not all, the adenoid, by pressure on the fossa of Rosenmüller may block the mouth of the tube even during nasal breathing; added to this is the secretion which may block the fossa and the tube, or the obstruction in the nasopharynx may cause an active or passive congestion of the tube, producing a catarrhal stricture, the inflammation may even extend into the middle ear; all three of these causes may be active at the same time, but one generally predominates the others, partially or completely preventing ventilation of the middle ear by obstructing the eustachian tube. If complete the middle ear is converted into a closed cavity filled with air. It is a fact beyond discussion that air imprisoned in a cavity in the human body will be absorbed; here it must produce a vacuum, because the bony walls of the middle ear can not collapse as soft tissue would to prevent the vacuum. Now what must happen? The air pressure being greater on the outside of the drum than on the inside, the drum is pushed in or retracted, becoming fixed and less movable, and sensitive to sound waves, at the same time fixing the ossicles, making the whole of the movable sound-conducting apparatus more or less stationary. This is a typical aerosatic intermittent deafness, which can be demonstrated by polarization or cathertization, reestablishing the aerostatic equilibrium of the middle ear, the drum assumes its normal position, unlocking the ossicles, the hearing improves, and if it soon returns to normal is proof of an aerosatic deafness. Having proved that a partial or complete vacuum existed, we now have to deal with the force of the vacuum. All of you have used the vacuum cup to produce local congestion. Nature, by absorbing the air in the middle ear, creates

a vacuum producing congestion; this congestion produced by a physical force equals a catarrhal mucous membrane. All catarrhal mucous membrane has a tendency to secrete mucous, and especially to ooze serum when aided by a vacuum, which explains the presence of mucous and serum in the left ear.

Treatment.

Removal of cause, which by our double method of reasoning from symptom to etiology, then by checking back we confirm that the adenoids are the indirect cause, producing the pathological and aerostatic disturbance by obstructing nasal breathing plus its secretions and irritation of the nasopharynx, causing outpouring of mucous or muco pus, converting the upper respiratory tract into a condition that is best described during an attack of cold as a physiological constipation with a pathological diarrhœa, from whence nature expects the middle ear to be ventilated with moist, warm air.

February 8, 1908, assisted by Dr. J. P. Turner, patient in a sitting position, anesthetic, ethyl bromide, I removed the right faucial tonsil with a tonsillotome, and the adenoid with a curette. Time from the beginning of the anesthetic less than two minutes; bleeding stopped in less than five minutes. Now let us begin with the removal of the cause, and trace the result. The upper respiratory tract again performs its physiological function, because the obstruction is gone, the mucous membrane of the nose begins to assume its physiological role, secreting more water and less mucous, because nasal breathing is our best therapeutic agent for this congested membrane, and soon the spray will become a therapeutic relic, the water is taken up by the inspired air, which is essential to the lungs, the mucous will cease to be excessive and performs its function of protection to the sensitive mucous membrane. Now we find moist, warm air in the nasopharynx, no pressure on the fossa of Rosenmüller or eustachian tube, no congestion or catarrh of the tube. The physico-physiological relations of the upper respiratory tract, the eustachian tube and the middle ear has been reestablished. The aerostatic

disturbance and attacks of catarrhal otitis ought to cease to be. Then the intermittent caraches and deafness must disappear, our patient is no longer a mouth breather or has the sniffles, and from last report, May 4th, our patient has become a good sleeper and eater, has gained six pounds in less than three months, and has taken only one dose of medicine. Is this not a triple reward? The mother is allowed to sleep, the boy takes only kitchen tonics, and the father delights in his boy's good health. Had we not operated on this little fellow, and if we would keep his history for six or eight years, I believe we would have a history fitting for cases two and three, that I will now briefly report.

Case 2.—Age, 11; female; seen first December 2, 1905. History for past six or eight years, every winter was a repetition of the symptoms found in case one. For the next six weeks while under my care she passed through the whole category of conditions found in case one more than once. She would have aerostatic deafness, catarrhal otitis, drum distended; with mucous in middle ear; by polarization and the proper treatment of the nasopharynx could reestablish ventilation; mucous would be absorbed, the hearing improved, and in a few days we would have the same conditions to contend with again. The mother had become very uneasy about her daughter's hearing, throat and lungs. Her condition, in short, expressed in a long word, was, rhino-pharyngo-laryngo-tracheo-bronchitis. She would frequently wake at night from coughing. Her history was that she had suffered this way for several winters. Knowing the prejudice of a general anesthetic by the mother, after much persuasion, I convinced my patient that the operation would not hurt, although feeling at the same time that experience might teach her different. January 20, 1906, with Dr. A. R. Wilson's assistance, under cocaine and adrenalin, I removed this adenoid with one stroke of the curette. When asked if it hurt, she said, "You did it so quickly that I could not tell." Later I removed the right faucial tonsil; the left was not hypertrophied. She

began to improve, but was not free from head and chest colds till late spring. The next winter, except a severe attack of diphtheria, her condition was excellent. This winter she has made two visits to my office during an attack of acute cold. At no time for the past eighteen months has she had any trouble with her ears, and her hearing is good.

Case 3.—November 24, 1906. Age, 12. Referred to me by Dr. J. E. Brooks for hearing and nose trouble. The symptoms, pathology and etiology, I will not discuss, but show you the adenoid which I removed, assisted by Dr. Brooks, anesthetic, bromide of ethyl, and allow you to draw your own conclusion by comparing with case two, except to mention that caraches disappeared, hearing became good, and general health improved. I would not have you believe that all cases of intermittent deafness are in adenoidean children; no age or sex is exempt; any local or systemic cause producing an acute or chronic nasopharyngitis may, by congestion, secretion, or extension into the tube, produce a temporary stricture of the tube. These conditions are often found as a complication of colds, lagrippe, measles, diphtheria and scarlet fever. Cases two and three were nearing the border line, and in a few years would have reached the state of remittent deafness, which we will now consider.

Remittent deafness is in those cases where the hearing is always below normal, but at times from such transient causes that produce intermittent deafness, the hearing goes below its normal and returns to its average when the cause subsides. This type of deafness is generally associated with chronic catarrhal otitis of the hypertrophic type, which has extended from the nasopharynx through the tube, or has developed *pari passu* with a hypertrophic stricture of the tube. The diagnosis requires the same steps as in the intermittent type, plus the exploration of the eustachian tube with eustachian bougies or sound. One who is familiar with the topographical anatomy of the nasopharynx and has acquired the manual dexterity for doing this work, with an eustachian

catheter diagnostic tube bag, can easily pass the catheter through the nose into the fossa of Rosenmüller, then with one end of the diagnostic tube in the patient's ear, the other in the operator's ear, by pumping air through the catheter we find that air passes freely through the tube into the ear and returns, it demonstrates that the tube is patulous and we are not dealing with an aerostatic deafness; but should we find that none passed into the ear, or that it passed under high pressure and distended the drum, which gradually returns to its position as the air is absorbed or filtered back into the nasopharynx through the tube, then we know that we are dealing with an eustachian obstruction. Now by applying about three drops of 1-2000 adrenalin and 5 per cent cocaine solution, through the catheter and blowing it into the tube and into the middle ear if possible, we can easily complete our diagnosis. If a congestive stricture, the solution will reduce the congestion, and in about five minutes air will pass freely into the ear. If a hypertrophic stricture we will find very little improvement, but can pass while cocainized a small bougie or sound, then possibly one or two numbers larger, then by pumping air under one to two pounds pressure we find that the tube is open and that the air hits the drum at one gush and sounds as if a small shot hit the drum. If the ossicles are free and easy the hearing will improve at once; but if the joint from catarrhal otitis be stiffened, the hearing may be worse for a few minutes and not at its best till one or two hours. The fluctuation of the hearing is a favorable sign, because it demonstrates that the trouble is in the middle ear and not the internal ear. Should the obstruction be an organic stricture from the cicatricial contraction of the hypertrophic connecting tissue the eustachian bougie will meet with a resistance like a solid substance and not push through as in the hypertrophic type. Experience alone can teach one the proper interpretation of touch to have the assurance that the bougie is in the tube and not gone astray into the tissue, and frequently we must be satisfied by passing the

smallest bougie, if any at all, and are justified in calling it an organic stricture.

Case 4.—July 19, 1905. Male; age, 55. History: Can not hear conversation well, ears uncomfortable, and feel full; noise in the ears especially when he takes cold; inspection, drum has lost its pink hue and is retracted and somewhat thickened; a catarrhal condition is easily made out over the handle of the malleus and Schrapnell's membrane. Nose and nasopharynx free from any obstruction, but in a chronic catarrhal state of rather a relaxed type, with considerable secretions; hearing of watch, B. S., three and one-half inches; Rinné test about a draw—neither plus nor minus. By catheterization found the tube obstructed; air would pass into the tympanic cavity with a shriek, drum would bulge; cocaine and adrenalin would not reestablish ventilation; therefore, not congestive, but either a hypertrophic obstruction or an organic stricture. While anesthetized I passed a small bougie, which met with a resistance like pushing through something; the next size passed equally as easy, the air escaped and drum assumed a neutral position. The hearing worse while drum was bulging, and better after passing bougie is proof that the trouble is in the middle ear and not in the internal ear; and if this is a chronic catarrhal otitis, the improvement of the hearing will be in a reverse ratio to the hypertrophic connective tissue of the mucous membrane of the middle ear, especially the muco-periosteum covering the ossicles, for this hypertrophic tissue will become cicatricial tissue, and by its contraction will lessen the movement of the ossicles.

Treatment.

The treatment was the reducing of the catarrhal condition of the nasopharynx by the application of five or ten grains to the ounce of nitrate of silver; the passing of the bougies was repeated daily as described for six weeks, when the largest bougie would pass easily and the tube remained open and ventilated perfectly. The hearing in case four improved gradually, and at the end of six weeks could hear watch B. S.

fifteen inches; two months later could hear watch twenty-four inches. Can there be any possible doubt that this was a case of aerostatic deafness? With chronic catarrhal otitis only a limited amount of the connective tissue of the muco-periosteum has become hypertrophic, therefore, treatment was crowned by a happy result.

December 14, 1907, ears examined; watch B. S. eighteen inches. Tubes not ventilating perfectly, I advised a week or ten days' treatment, which would again put the tubes in a normal condition. These cases should be examined yearly, for they have a tendency to relapse.

Continued aerostatic deafness is in those cases where the hearing is so much impaired that the victim is at a social and financial loss. It is the exponent of the third stage of chronic catarrhal otitis; the hypertrophic tissue, by its cicatricial contraction, produces an organic stricture of the tube and stiffens the joint of the ossicles. The aerostatic vascular and nutritial disturbances will be permanent, the pathological condition progresses slowly, but surely, destroying the physiological function of the middle ear, as seen in the right ear of the fifth and last case of this paper.

Case 5.—July 23, 1906. Male; age, 30. Right ear; severe tinitis for two years. Watch in contact, Rinné test, negative. Left ear, watch twelve inches, Rhinné test, positive. Nose, B. S. Intumescent rhinitis septum deviated to right with ridge; with this a chronic nasopharyngitis. The noises make him nervous, and often can not go to sleep for it; at times so annoying that he must leave his office work and get out for a while to relax. Is willing to be deaf in one ear, but must have the noise stopped. Diagnosis: Right ear organic stricture of tube, which required but one week to pass smallest bougie, by gradually dilating its proximal end; the stricture was about one-fourth of an inch in length. Left ear stricture of tube about one mm. in length, which permitted partial ventilation through a very small opening. Siegel's otoscope showed no appreciable movement of the ossicle in right

ear; fair amount in left. The summing up of right ear, an organic stricture of the tube with continued aerostatic deafness or a pathological sclerotic otitis. Left ear diagnosed remittent deafness, which has been described.

Treatment.

Reduced B. S., the intumescent rhinitis, with cautery; removed septal ridge in right nares, established nasal breathing, reduced congestion of nasopharynx with solution of silver, the daily passing of bougies in both tubes, and the application of 1 per cent solution ichthyol in alboline to the tube and middle ear was the treatment pursued. In two weeks tinitis in right ear beginning to diminish; in six weeks improvement so great that he did not notice it except at night or where everything was quiet. This improvement was in a direct ratio to the dilation of the tube, establishing ventilation. Hearing in both ears after nine weeks; watch in right ear one inch, in left ear fifteen inches; tubes ventilating. May 5, 1907, tubes open right ear, watch two inches; a little tinitis at times; left ear, watch thirty-six inches, which is positive proof of continued deafness in right ear, chronic catarrhal otitis in left, with little damage to the mucous membrane of the middle ear, or else the remarkable improvement in hearing would not have been after treatment was finished; its only therapeutic agent was the ventilation of the tympanic cavity, with moist, warm air.

THE IMPORTANCE OF THE EARLY DIAGNOSIS AND TREATMENT OF THE MASTOID COMPLICATION OF MIDDLE EAR DISEASE.

BY J. M. LILLY, M.D., FAYETTEVILLE, N. C.

It is not my purpose, in this brief discussion of my subject, to go into the etiology, symptoms and treatment of mastoiditis, but simply to call attention to the importance of its early recognition and urge that early treatment be instituted in every case.

At any time during the course of an otitis media an acute inflammation of the bony structures of the mastoid may result. Certain epidemics of the exanthematous diseases and of lagrippe have been marked by a large number of cases of this complication. We can not overestimate the gravity of the extension of an acute suppurative inflammation of the middle ear to the mastoid antrum and adjoining cellular bony structures. This with certain other diseased conditions has its origin in suppurative inflammation within the tympanic cavity and is admitted to be the most grave of all diseased conditions of the temporal bone. It is said that the pioneer of modern otology, Dr. Adam Politzer, at the first of his annual lectures on otology, holds a temporal bone in full view of his class and slowly and earnestly tells them: The temporal bone has four sides—the outside is bounded by life, from which there comes through the opening of the external auditory canal one form of our appreciation of what life means. On the other three sides this bone is bounded by death.

When we recall the relationship of this bone to important intra-cranial structures, we plainly see how suppuration here may cause meningitis, extra-dural abscess, or cerebral abscess, thus jeopardizing life, besides rendering it a miserable existence even should these grave complications not occur. The observation of a few cases like the two I shall briefly report will make us careful to look for, on the alert to avoid this

dreaded condition, and heroic in our efforts to relieve it should it occur.

Case 1.—A woman fifty-three years of age admitted to the charity ward on February 7th, suffering very much, and after the operation she stated that she had no recollection of having been brought to the hospital. Profuse discharge of very foul pus came from the left ear. She had suffered from an acute attack six months before with no surgical treatment, and the discharge and pain had never ceased. There was redness, swelling and tenderness over the mastoid. On February 11th I operated, and as soon as the soft parts were divided down to the bone there was a gush of creamy pus from a large sinus in the bone communicating with the mastoid antrum. The diseased bone was carefully removed, exposing the lateral sinus, and a complete radical operation was done, including the removal of the malleus and incus. The wound was packed with iodoform gauze and dressed daily. The patient left the hospital March 12, well except there was a small area over which the skin had not grown. I saw her at my office a few times, and when last seen the wound was entirely well, no discharge, and hearing fairly good on that side, but of course not so good as the other ear. At this time solutions thrown into the external canal pass into the throat through the eustachian tube. Had this operation been done months before untold suffering and danger would have been avoided.

Case 2.—This case will show that not all neglected cases of mastoiditis are so fortunate as the first case reported. This case is also a female forty years of age, admitted to the hospital March 6th with the following history: Early in January she was taken with a severe pain in her right ear and right side of her head. After a few days of excruciating pain a foul discharge appeared from the external canal, and the mastoid became swollen red and tender. The patient gave some history of tuberculosis in the family and had for several years been troubled with a cough with considerable expectoration. She was pale and anæmic and had a considerable rise of temperature. She complained of a severe

and constant headache on the diseased side and occasionally had spells of vertigo, this being more noticeable just after irrigation of the ear. She was carefully prepared for the operation, which was done on March 11th. A free division of the soft parts was followed by a gush of pus, which came in distinct pulsations, showing a communication with the meninges. There was a large opening in the necrosed mastoid, which was enlarged and the dead bone carefully removed until the middle ear was exposed. In the posterior wall of the cavity was an opening partly filled with granulations which I thought led directly to the lateral sinus, but at the suggestion of the assistant the soft parts were pulled further back, bringing into view a larger opening in the bone, through which a finger could be introduced into the cerebellar fossa and the pulsations of the brain felt. During the operation about one-fourth of an ounce of pus was evacuated from the cranial cavity beneath the dura. The facial nerve was exposed in a mass of diseased bone, but was not cut. The semicircular canals were not exposed. The cavity was flushed with normal salt solution and packed with iodoform gauze. The patient was very weak and we feared would not rally from the effect of the operation and anesthetic, but she did, and within a few hours was conscious and talking, there being no facial paralysis. By next morning, however, there was almost complete facial paralysis on that side, which had improved some when she left the hospital eight weeks later. Her wound was dressed daily, all bad odor soon disappeared, and it was almost closed when last seen; but the patient still suffers from vertigo, still has a marked facial paralysis, and a small opening from the wound communicates with the external canal.

While I do not contend, nor do I believe that every case of acute mastoiditis demands a radical operation, I do believe that a large majority of them do, and each case should have careful consideration, and unless rapid recovery takes place the operation should be done and avoid the serious complications and dangers attending the delay.

AN INTERESTING CASE OF GANGRENE.

BY K. P. B. BONNER, M.D , MOREHEAD CITY, N. C.

In bringing this case to notice, I shall depart from the usual custom—that of reporting cases that are successful in every sense of the word. In other words, this case did not make a recovery, although the results obtained in the treatment were all that could be asked for, as far as it went. This is, I think, one fault or weakness of all organizations of medical men—they try to put the "best foot" forward, so to speak. However, I am sure that you will find this an interesting case.

The case in question was that of: J. G.; widow; female; negro; age, 55. Occupation, farmer and clamer. Had always been a hard worker and had performed hard laborious work for the greater part of her life. Previous history, so far as I could ascetain, was good. Family history was unobtainable.

Was called to this patient on the morning of September 28, 1907. On reaching her home, I found that she had been suffering with shortness of breath for about ten days. This had been gradually growing worse, in the meantime, until now she was unable to lie down at all. She was propped up in bed and had great difficulty in breathing, could hardly talk, as it seemed to tax her respiratory organs too much. Her sleep was badly interfered with, and appetite was very poor, in fact, completely gone. The thermometer revealed no fever. Tongue was heavily coated with a slimy, white coat. Bowels very sluggish. An examination of the heart and blood vessels revealed a pronounced valvular lesion, enlarged heart, and a very irregular pulse. It was evident that compensation had failed. A slight cough was present, but a careful examination of the lungs failed to elicit any disease present in these organs. Kidneys were acting well, so she said. At this point, I would like to state that, although I asked repeatedly for a specimen of urine for examination, I was unsuccessful in ever obtaining it. On one occasion they

sent me about a half ounce in an unclean bottle. Nothing could be learned from this. The lower extremities were swollen and œdematous.

I left a purge to open and cleanse the bowels, and also gave a mixture consisting of buchu, juniper and potassium acetate in sufficient quantity to make the kidneys act freely and thereby get rid of some of the œdema in the legs. Tincture of digitalis was to be administered in ten-fifteen drops doses every four-six hours to strengthen the heart.

Instructions were given to keep me notified of her progress. In about two days her daughter came to my office and told me that her mother was much better. Bowels were acting good, appetite much improved, and shortness of breath very much better. However, that since my visit, the patient had been troubled a great deal with severe pains in her right foot and leg. Morphine was sent to relieve this. These pains continued to grow worse until they became almost unbearable, and after about a week disappeared.

On the 8th of October I was again called, and this time found that the whole right foot was gangrenous—of the moist variety. Her foot was of a dark, nearly black color; was greatly softened, and no matter how deep a needle was thrust in the flesh did not cause the slightest pain or any feeling at all. Large "blebs" or bullæ had formed on this foot and leg, some of which had ruptured and were running a watery fluid of a peculiar fresh odor. A number of small bullæ had formed on the left leg and foot. Her heart was beating somewhat fast, but was in a much better condition and showed great improvement at this time. Temperature was beginning to become elevated, showing beginning of sepsis. She was instructed to keep the leg well wrapped, at the same time to use some disinfectant and deodorant powder. I urged the patient to immediately get ready to come to Morehead City (she lived six miles in the country), so that the foot could be attended to daily and amputated at the proper time.

In spite of this advice, nothing more was heard from the patient until six days later (October 14th), when I was

again called. When about fifty yards from the house a bad odor was noticed; and upon going into the room and examining the affected foot and leg, the cause of the bad odor was explained. The gangrene had extended on up the leg to a point some three inches below the knee joint. At this point there was a sharp line of demarcation which extended in an irregular line around the leg. The moist gangrene had now become converted into a moist putrefactive gangrene and the soft parts were just a pulpaceous mass. The gangrenous area was of a greenish black color. The odor was truly horrible, and I must confess nauseated me. The swelling and bullæ in the left leg were beginning to disappear and the chances looked bright for no serious trouble with this limb. The patient had developed a high temperature and had had one or two chills. It was evident that septic poisoning was already at work. No time was to be lost, and I plainly told them that the leg had to come off or she would die. By this time the patient herself realized that the leg was dead; she must lose it. She agreed to come to Morehead City and to try to come that day.

After returning to town, I looked for her all day, but she did not come. Finally, on the afternoon of the next day (October 15th) she came. Her temperature was mounting higher and higher. Chances looked very slender for her recovery. Septic poisoning had set in in dead earnest, with all the symptoms attendant. The senses were very much dulled and thinking capacity and memory were nearly gone.

Preparations were immediately begun to amputate, and on the next morning (October 16th) the chances appeared so small that it looked to be a hopeless task. The pulse was 180 and so weak that it was hardly perceptible. Her general condition was correspondingly bad. As this was her only chance we began the amputation. My colleague, Dr. W. E. Headen, administered the anesthetic which was chloroform, ether was not obtainable. The patient took the anesthetic badly. A hypodermic of strychnine and atropine was administered before we began. After an examination

of the leg it was decided that an amputation at the knee joint was the best procedure. The gangrenous leg was wrapped in towels wrung out in hot mercury bichloride solution. The tourniquet was applied and the field of operation was sterilized as well as possible. The amputation was made by a long anterior and short posterior flap method. In making the posterior flap, after cutting the anterior flap and unjointing the knee joint, just as I cut through the skin from within out and the leg was severed, there was a gush of pulpaceous fluid which came from a sinus that led up the posterior aspect of the knee joint for about three or four inches under apparently healthy skin. There was nothing to do but go higher up with the amputation. The popliteal artery was tightly plugged with a well-organized thrombus. I cleansed my instruments as well as possible and amputated five inches above the knee joint. This was well within the healthy area of tissue. The same kind of flaps were made and were sewed up and drainage left in. The stump was dressed in the usual manner.

At this point I will remark that the patient practically died twice on the table; each time respiration and heart ceased. The last time a hypodermic of 95 per cent alcohol (20 drops) was administered, which soon revived her. The total time consumed in the two amputations, however, was not much over an hour.

I remained with the patient nearly all day, and about 4 o'clock in the afternoon she began to revive. By night she was much better. Her mind was much clearer and pulse had dropped to 120 and was stronger. The next morning and afternoon (Oct. 17th) improvement continued steadily. In the afternoon of this same day her pulse and temperature reached normal. Appetite was good. Chances now looked bright for a speedy recovery.

On the morning of the 18th we dressed the stump and healing was progressing nicely. There was some little soreness in it. Improvement of her general condition was steady and uninterrupted. Pulse and temperature normal. Senses

clear and appetite much better. Bowels and kidneys were acting much better; in fact, well.

On the morning of the 19th temperature was 102, but the pulse showed no change from normal. Patient was perspiring freely. In the afternoon temperature was normal but the pulse was 100-110. Something was evidently wrong and seriously wrong at that. On the morning of the 20th temperature was 102.5 and pulse normal. The afternoon of this day showed a pulse of 120 and temperature of 102.5.

When the peculiar ranges and wide variations between the temperature and pulse began I would examine the stump and left foot and leg carefully at each visit. The stump revealed no cause for the trouble as it kept on healing. It was draining nicely and the exudate was ordinary wound fluid with no odor. The left leg and foot seemed to be improving steadily. The swelling was subsiding and was nearly all gone. The bullæ had disappeared except one large one on the dorsum of the foot. This was shrinking and nearly gone. The foot, nevertheless, was cold and the patient complained of it being numb. Hot water bottles were kept to it constantly. The next morning (Oct. 21st) the left leg revealed the cause of all this disturbance. The lower part of the calf was gangrenous. The area was probably the size of a silver dollar or larger. Immediate amputation at a level with the other stump was advised. The operation was refused as the patient said "she preferred death to the loss of both legs."

There was nothing to be done now but make the patient just as comfortable as possible until death relieved her suffering. I continued my visits until she died on the morning of the 23d. The gangrene soon involved the whole foot and then spread progressively up until just below the knee joint. The line of demarcation was beginning to form just before she died. The same horrible odor was present as in the former limb, because this, too, was the moist putrefactive variety.

There are two valuable lessons to be derived from this case. First, that it is never too late to amputate in gangrene. I can fully agree with the late Dr. Nicholas Senn, who cites cases in which the patient was no near dead with septic poisoning that no anesthesia was necessary. The amputation would be made, and, even with these worse than desperate chances, would make a rapid and complete recovery, showing the wisdom of operative interference at any stage of the disease. Second, that great care should be exercised that amputation is well within the area of healthy tissue. It is better that some of the healthy tissue should be sacrificed than that the operation be too low and make a second one necessary, and this with contaminated instruments and the dangerous possibilities for the patient, prolonging the operation, as well as greatly ruffled temper.

In my opinion the cause of this trouble was endocarditis. This inflammatory condition produced vegetations or granulations on the aortic valves, and the force of the circulation broke off a piece of these vegetations which passed directly down until reaching the bifurcation of the popliteal artery, and here lodged on account of the diminished calibre of its branches. This embolus was rapidly converted into a thrombus. The extent of the gangrenous area bears me out in this opinion, or at least shows that the source of the trouble was in or near the knee joint, for the line of demarcation appeared just below the knee joint in each instance. Another reason for holding this opinion, theory if you will call it, is that there was certainly valvular disease present. Finally, there was absolutely no history to point to an external agency as a cause.

I shall always feel that this woman's life could have been spared had she consented to an amputation of the last leg. The results with the first justify me in this belief. This, however, is nothing more than mere conjecture and so is useless talk. I shall amply be repaid if this furnishes you any "food for reflection" as a result of the report of this unusual case.

AN INTERESTING CASE OF STONE IN THE BLADDER.

BY J. M. PARROTT, M.D., KINSTON, N. C.

On February 21, 1906, by invitation, before the Onslow County Medical Society, I read a paper with the title "Suprapubic Cystotomy—A Study." In this paper I reported a case which had been in my care. From this paper I quote extensively. My excuse for discussing it again is because of the developments which have arisen since it was first reported. In the spring of 1897 I was consulted by Dr. S., age fifty-eight. Fifteen years prior to that time he began to suffer from a traumatic stricture of the deep urethra. When first seen he was much emaciated and presented the usual symptoms of urethral stricture of the most aggravated type. * * * After careful treatment by dilatation the stricture was somewhat relieved. The vesical symptoms of which he complained a great deal continued and I diagnosed cystitis. My notes of that time say "When seen he presented well-marked symptoms of vesicle calculus, though the stricture was too tight to permit a confirmation with bougie or stone searcher." Altogether he was a very bad subject for operation. He was a physician. He held to the stone in the bladder diagnosis and insisted on an operative procedure.

I elected to do a perineal section because of the existing urethral stricture. After entering the bladder two large stones were found. Because of certain circumstances then existing I could not remove the stone via perineam, and at once did a suprapubic cystotomy. The two stones first found were removed and a third one discovered imbedded in the posterior bladder wall. A drainage tube was introduced into the suprapubic wound, and on the sixth day after the operation a violent hemorrhage began which continued more or less freely and intermittently for two days, being finally checked by through and through irrigation with very

hot water. With this exception he made an uneventful recovery.

In March, 1902, I again removed a stone suprapubically. This time he made an uninteresting and rapid recovery. On January 30, 1906, I did a third suprapubic section and removed another stone. On the fifth day after this operation he was sitting up and on the seventh out visiting. In my paper to which I have before referred I predicted the formation of another stone within a year or two from that time (February 27, 1906); my prognosis has come true. On March 31, 1908, I again did a suprapubic cystotomy and removed a stone weighing about 600 grains; he soon recovered and was enabled to walk on the streets. Two weeks after the operation the wound had entirely healed. The last two operations were done with local anesthesia, except the administration of a few drops of chloroform at the close of the seance to facilitate the delivery of the stone by relaxing the recti abdominalis.

Quoting from my paper of February 21, 1906:

"This to me has been a most interesting case and is worthy of close study. It presents for consideration six points of interest:

First, he is and always has been a man of good habits. His personal history is negative, especially as to renal colic or any manifestation of lithæmia. While he has always lived an active outdoor life, yet his exposure has been nil. His figure is spare, and aside from this vesical trouble and traumatisms his health has always been good.

"Secondly, the indications calling for the operations were three in number: Stricture, which demanded a perineal section; a very violent and infective cystitis, due in a large measure to dirty bougies, and the stones. The perineal section was done at first because of the stricture. It has never been a popular operation with me and I had a splendid opportunity in this case to study the two together.

"This leads me to consider the third point of interest, viz: That suprapubic cystotomy in the majority of instances is

decidedly preferable to perineal section. When a case presents itself in which the bladder should be opened the first question which naturally presents itself is which operation is indicated? The answer must be made in accordance with the conditions presented in a given case. Suprapubic cystotomy is unquestionably the preferable operation for foreign bodies, tumors and chronic cystitis, but is it better all things considered than the low operation for stone in the bladder? I believe it is. * * * I believe a compilation of statistics covering the last ten years would be decidedly favorable to suprapubic cystotomy. There are unforeseen conditions which may arise during and after the operation which give the high method a great advantage. When hemorrhage occurs after the operation, as it did on the sixth day in the case reported, it can be easier controlled than it could be possibly should it occur after perineal section.

"It is true that often one can form approximately a correct idea of the size of the prostate by rectal palpation, etc. Still in concentric prostatic hypertrophy this preoperative idea is crude. Hence in these cases the advantage is decidedly in favor of the suprapubic method. Should the stone prove a large one (and who can measure its size before going into the bladder) as in the case under study, the surgeon then in that event would be forced to go above the pubes or else crush the stone, and thus add a litholopaxy to the perineal section. * * * By perineal section it is possible to overlook an imbedded stone even after careful digital exploration. This occurred in my case, but fortunately I discovered it after opening the bladder above. * * *

"Bryant says 'the method (suprapubic) permits of a complete inspection of the bladder, obviates all danger of injury to the structure of the neck of the organ, and establishes a wound in a favorable site for cleanliness.' He further says: 'Irrespective of the foregoing (statistics quoted by him) results it should not be overlooked that one is likely to succeed best, other things being equal, in the use of the method of

practice with which he is most familiar.' In the case under consideration it succeeded after perineal section failed; it met every indication. * * * The violent cystitis which unquestionably developed independent of the stone and from outside infection could have been managed better by the higher operation. The hemorrhage to which reference has been made could not have been controlled by and through the perineal section as by and through the high opening."

"The fourth point of interest is the operative method pursued. The perineal section was the classical lateral operation and needs no comment. The suprapubic section was strictly according to the rules. * * * With the first operation on the patient under discussion I used the rectal bag and dilated the bladder with eight or ten ounces of boric solution. * * * After the first and in the second and subsequent operations I simply dilated the bladder and did not inflate the rectum.

"Strange to say I found but few adhesions in the space of Retzius at the second operation, but the bladder was found united to the abdominal wall at the third seance. So that, while the second was a typical suprapubic cystotomy, the third was not more difficult than opening an abscess."

The fourth suprapublic cystotomy, as were the second and third, was through the original scar, and while it was not so simple as the third, was not as difficult as the first or even the second. At the time of the fourth operation, a few weeks ago, the patient was sixty-nine years old.

Again quoting from the paper presented to the Onslow County Medical Society:

"The fifth and most interesting complication in this case was and is the recurrence of the stones. Did the urethral stricture contribute to the stone formation in the original instance, and has its contributory influence been felt in the production of subsequent stones? Decidedly yes. Given a possible constitutional tendency to stone formation (which is not apparent in this case) and an urethral stricture will prove

a powerful etiological factor. The stricture may produce an actual dilatation of the entire bladder wall or some section of the same. In this way it may add largely to the amount of the residual urine. The bladder of this patient presents a strikingly large pouche or cul-de-sac in its lower and posterior wall. In this a large quantity of urine remains at all times since it can not be entirely emptied, and here the stones constantly reform. The bladder was explored by the finger and carefully irrigated many times after each operation, and the writer is very positive that no stone remained.

"The last complication to which I desire to call your attention was the hemorrhage on the sixth and seventh days after the first operation. A stone deeply imbedded in the posterior wall was removed at the first operation, and necessarily a raw surface remained. I left the drainage tube in for some time, and it was in situ when hemorrhage occurred. It is my present opinion that the tube by friction produced an ulceration of the mucous membrane, perhaps, and more than likely at the site from which the imbedded stone was removed. There is really no necessity for leaving a tube in the bladder longer than forty-eight hours, unless there is an infective cystitis, and then in that case an olive-pointed tube or Senn's syphonage tube should be used."

I have used, usually prescribed and generally recognized, constitutional treatment together with vesical irrigations as prophylactics in this case with no appreciable result. I predict the formation of another stone in eighteen months or two years. His stricture has caused no special inconvenience since the first operation. He has kept this well dilated and has used reasonable care with success to prevent infective cystitis. Would it be better to try to remove the vesical cul-de-sac by surgical procedure if it could be done, which I doubt, and thus rid him of a probable causative factor, or run the no doubt increased risk of another stone if the pouche be an etiological element. I am of the opinion that the latter is decidedly the better course to pursue.

INFLUENZAL ARTHRITIS.

BY JAMES J. PHILIPS, M.D., TARBORO, N. C.

I desire to present, in as few words as seem practical, the histories of two cases of well-defined grippe in which the primary and cardinal symptoms were exhibited by the joints.

Some hesitation has arisen in my mind in regard to the proper expression which should designate this interesting form of lagrippe. The term rheumatoid grip is possibly open to criticism since to many minds it connotes the idea of some preexisting constitutional dyscrasia, while influenzal arthritis conveys the idea of involvement of the articular surfaces, a pathological condition not observed. Either heading, at all events, will serve my purpose when it signifies a condition arising in the course of lagrippe wherein the joints share in such a pronounced degree as to modify the clinical picture and to constitute the particular feature of the seizure.

It was my experience during the past winter, in the management of some obstinate cases of lagrippe, to encounter two cases which exhibited inflammation around the joints of such nature and character as to render interpretation difficult. Each case began as lagrippe, with symptoms generally accepted, and continuing as such developed, with more or less promptness, articular pain and tenderness, swelling of the peri-articular tissues, a moderate amount of effusion into the joints and impairment of function; in a word, an exudative inflow motion of a moderate grade in and around the joint cavities. Case two exhibited these features in the right ankle and right knee, the inflammation beginning simultaneously in both joints. Case one, subsequent to involvement of both knees, both ankles and both big toe joints, and, before resolution, both wrists and the left shoulder became similarly affected. With each onset were associated an exacerbation of fever and a degree of discomfort distressing. So distinct and sharply-featured were the seizures that in onset and

course, in duration and decline, the condition paralleled acute rheumatism very closely. It would be a mistake, however, to regard these cases as rheumatic unless the term be employed in a generic way and made to comprise several varieties of infection. In neither case did the anamnesis supply a history of previous rheumatic attacks, articular or muscular, in patients or correlation, nor did there exist, so far as could be clinically observed, an involvement of the articular surfaces. There was no sweating. Though the cases featured rheumatism they were not true rheumatism. So, then, for the purpose of a correct and prompt interpretation, since these cases readily lead to error, it would seem justly desirable to separate them, and as a matter of expediency to specify such "influenzal arthritis." In the light of such a designation your attention is called to cases which exhibited the following histories and symptoms:

Case One.—On March 8, 1908, J. S., age forty-four, is in bed with fever 102 degrees F.; pulse 120. He has been ill for three days with aching in back and limbs, a cough and fever, and has taken to bed by reason of an increase in severity of these symptoms. He had an attack of lagrippe several weeks previously, though indifferent therapy had not fully restored him before he is down again. There is no joint involvement. The symptoms are purely subjective though there is noticed some pain on active motion of the lower limbs. He has never had rheumatism. On March 9, 1908, three days later, six days from onset, both feet, both ankles and big toes, both knees develop pain. The onset is rather abrupt. The joints become diffusely swollen, puffy and very tender to pressure. The digits particularly are tense, swollen and shiny in consequence of a serous exudation. There is spontaneous pain and pain on motion, while the local symptoms are offset by a rise in temperature of one and one-half degrees and a relative increase in pulse rate. The external appearances recall rheumatism. It is obvious,

however, that most of the swelling is in the tissues around the joints, though some effusion into the cavities is undoubtedly present. Such was the condition on March 9, 1908. On April 2, 1908, the patient is up and about. He presents the appearance of having had a severe illness. There is corresponding emaciation and weakness. The joints, however, are free from pain, the swelling has subsided, the function restored and, apart from some atrophy above and below the joints (best observed in the knees), there is slight if any trace of the former involvement.

The physicial condition presented in this interim was that of an acute inflammatory state of the joints. It was punctuated on March 18, 1908, by a milder yet just as characteristic involvement of the wrists and the left shoulder. Here again was a rise in fever and pulse rate and increased discomfort. The process was similar to the original one and evidently arose from the same cause, representing an exacerbation. The joints presented the same characteristics.

The subsidence of the process was in accord with the usual history of similar conditions yielding to therapy and occupied about twenty-three days.

Case Two.—An adult male, a laboring man, age twenty-seven, the victim of lagrippe; ill for several days with fever, headache, general aching, a dry, hacking cough and prostration. There is nothing unusual in the history nor in the progress of the disease to date. He has never had rheumatism nor gonorrhœa. Temperament, nervous.

February 12 and 13, 1908, represent the fifth and sixth days of illness, which are passed in moderate comfort. The fever has ranged from 103 degrees F. to 101 degrees F.; the pulse from 128 to 110. He presents the symptoms of lagrippe. Insomnia from the beginning of the illness, and throughout has been troublesome. On February 14, 1908, there comes on a diffused swelling and redness of the right ankle and the right knee. Associated is a rise in fever to 103 degrees F. and a pulse rate of 122. The joints are red,

hot and oœdematous, the seat of an acute process. The swelling is not so much from effusion into the cavities as from œdema of the surrounding tissues, and is confined to the immediate neighborhood of the joints. Tension is not great; there is no local nor general sweating. The joints are very painful, hyperæsthetic to slight touch and most comfortable in the characteristic position of semiflexion (knee). At rest the pain is of a dull nature, upon motion acute, and constitutes the overshadowing local symptom. This condition of affairs remained practically unabated for fifteen days, during which the patient suffered greatly. Of the elements in the condition the swelling was never very great, the amount of fluid in the joint not abnormal, though tenderness to touch and on motion was exquisite. The redness and heat increased rapidly at first, and at one point it looked as though the joint would suppurate. There was scarcely a semblance of function. The period of beginning decline, February 29th, was coincident with improvement in the general symptoms. It was first noticed when the heat and redness began to gradually disappear. Abatement of pain permitted on March 11th, the 26th day, a fair range of motion, while on March 15th the patient was able to present an extended limb with to and fro motion at the joints. The swelling persisted, however, at this date. The right knee measured 3 cm. and the right ankle 2 cm. more than the corresponding joints of the sound limb. This symptom was the last to subside. Though gradually abating some puffiness of the ankle was observed for three weeks more though the patient was up and about on March 22, 1908. The process lasted acutely from February 14 to March 15, 1908; subacutely for seven days more when the joints became apparently normal save puffiness of the ankle, observed for an additional nineteen days.

In these as in similar instances in which symptoms referable to the joints predominate, the clinical picture of lagrippe is obscured almost if not quite beyond recognition. The prime factor underlying them, I regard, a systemic intoxi-

cation, though it has not been made bacteriologically clear whether the condition is due to the influenza bacillus itself or to its toxins or to both, nor clinically clear under just what conditions the domiciled bacillus may thus develop undisturbed. There is not sufficient reason for believing that lagrippe has prepared the parts for secondary infection nor that true rheumatism has developed upon a fertile and predisposed ground. It would seem plausible, and my experience lends support to the view, that it is a question of intensity of action, an expression of a high degree of toxæmia and that no new or reinfection is at all required. As much at least seems fairly scientific when we consider that a specific action of the toxins of lagrippe not infrequently centers itself around the joints when joint aches and pains become very common. These, so long as they comprise a part of the symptom complex remain as symptoms solely, are amenable to therapy, do not leave the joint with impaired function and rest upon slight pathological change. They express a stage of pathological irritation resulting in congestion and nerve involvement. In allowing intense action upon such an irritated basis my judgment is completely satisfied in explanation of the clinical findings. Congestion and irritation will thus readily pass into exudation and the irritated joint express itself pathologically in exudate, in involvement of its tissues (particularly the serous membranes) and clinically as in the cases above recorded.

This conception lends itself also to other important considerations. Reference to the records of such cases as are at my command would lead one to expect the condition to usually follow lagrippe, constituting a sequel and prolonging the convalescence. This fact is well illustrated in the history of a case recorded in the *Lancet,* July 18, 1903, where four months was occupied in the process. Such was not the experience with these cases. Reference to them shows that in each instance the condition arose during the active seizure and at the height of the toxæmia, which seems much more logi-

cal and consistent. Particularly is this true if the toxins be held responsible for the condition, a view to which I am committed, though purely upon clinical grounds, for no bacteriological examination could here be made. The true significance of the association necessarily resting upon this can not, therefore, be thoroughly appreciated or satisfactorily established, and the question as to whether the clinical picture is an expression of a toxæmia or a bacteriæmia must remain unsatisfactorily answered.

It would appear that few observations have been made of the occurrence of arthritis in lagrippe. Having regard to their comparative rarity, these cases furnish sufficient interest to warrant reporting, though the material is not at hand to form the basis of a complete picture. It has been my purpose to present them in a practical rather than in a doctrinal manner. They are of value in showing that an acute process may arise in lagrippe which runs a course very much as does acute rheumatism, yet with the promising feature of an ultimate good result. They represent a complication, serious in that it accentuates an already serious state, while at the same time exposing the joints to still more extensive involvement. They express a high degree of bacterial or toxic activity. How far, under proper conditions, this may proceed rests upon future observations. In so far as these two cases would lead us to believe, under judicious care, we may expect a good prognosis, though the course is apt to be severe.

EMPYÆMA: ETIOLOGY, SYMPTOMS, TREATMENT AND WHEN TO DO THORACOTOMY, WITH REPORT OF CASES.

BY JOHN T. BURRUS, M.D., HIGH POINT, N. C.

Mr. President and Gentlemen of the North Carolina Medical Society:—In looking over the records of papers and reports of cases before the North Carolina Medical Society, I am unable to find a report of empyæma or any article on the subject, and since I have had a number of cases I have taken this for my text. Therefore I invite your attention to this subject for a short while.

The term empyæma denotes the presence of pus in the pleural cavity (or pleural abscess). We have two classes of cases, that of empyæma in childhood and in adults. In childhood it is very plain and the symptoms enable us to make a very early diagnosis.

In adults the diagnosis is very much more difficult to make, and usually requires a longer time than it does in childhood.

Etiology.—The causes of empyæma are due to the presence of biogenic bacteria in the pleural cavity, and is almost always secondary to some other disease.

1. Secondary to sero-fibrinous effusions, where thoracentesis has been performed for sero-fibrinous effusions and antiseptic measures have not been strictly adhered to. Secondary to pneumonia, scarletina, pyæmia, tuberculosis, dysentery, and sometimes measles, whooping-cough, carious ribs, carious vertebra and trauma.

2. Lymphatic metastasis is a probable way in which bacteria reaches the pleura from neighboring tissues. The organism which in most every instance has been found to produce this condition is the micrococcus lancolatus, streptococcus, staphylococcus and tubercle bacillus.

Symptoms.—The history of the patient is important and

my experience with the disease shows that 90 per cent of all cases occur after pneumonia or pleurisy.

Where the case has run an ordinary course of pneumonia or pleurisy and perhaps the patient begins to improve, fever reducing, and at the time apparently begins to convalesce. For a few days the patient has every indication of doing well, when a chill comes on followed by fever and a pain in side.

The symptoms are at first looked on as a relapse. In a few days dyspnœa, restlessness and immobility of the affected side.

In childhood the symptoms are more rapid in developing than in the adult. In a few weeks the clinical picture has changed. The patient that was once plethoric now becomes very much emaciated. The loose cough suggesting a tubercular condition, which is in many cases confirmed when the night sweats appear. The general appearance of the patient is that of extreme exhaustion.

Physical signs are pains in the affected side, dyspnœa and evidence of absorption of pus, skin cold and clammy and ofttimes bathed in perspiration. Respiration is from 36 to 50 to the minute; temperature varying from 101 F. to 105 F. There is a dullness in the affected side with change of sound according to the position of the patient. A disappearance of vocal fremitus on the affected side. The respiratory murmur is nil. The bronchial murmur may be perceptible if the accumulation is not too extensive, but if the effusion is sufficient to occupy most of the pleural space, then bronchial murmur is not heard.

In childhood the bulging of the affected side is not so marked as in the adult, owing to the thoracic viscera being less resistive and more easily displaced. In the adult there is more bulging of the affected side with obliteration of intercostal spaces. In the adult the heart is not so much displaced as in childhood.

On measuring the side from the center sternum to the spinus processes the affected side is seen to be larger, varying according to the amount of pus in the cavity.

In some cases we have rupture into the bronchi of pus, which is expectorated, and occasionally this relieves the patient and recovery is the result.

Treatment.—In cases of empyæmia I have very little faith in leaches, blisters, poultices or other external appliances, which have been suggested; neither do I believe in waiting for these cases to rupture or to go so long that the bulging is so extensive that it is ready to rupture externally. But as soon as a diagnosis can be made I think that every case should be operated on.

Usually we allay pain, so that our patient may be more comfortable, and give a mercurial purge, supporting the heart by giving heart stimulants and diffusible stimulants such as ammonia, strychnine, atropine and digitalin. But the only thing that I have done in these cases that have given me any results is thoracotomy as early as I could make the diagnosis. And the positive diagnosis is made by the introduction of a trocar obtaining pus.

The positive diagnosis made, I next proceed to do thoracotomy. This should be done by making an incision two and one-half inches long in the sixth or seventh interspace in the mid-axillary line; first observing the strictest antiseptic measures.

If the space is large enough to admit a large size rubber tube then it is sufficient; but if not, you should resect a rib which is done in the usual way. This gives a space sufficient to allow a free drainage. The tube should be held in situ by ligatures. To the drainage tube there should be a long tube connected, which conveys the fluid from the drain to a vessel containing an antiseptic solution. This acts for two purposes:

1. Preventing the induction of air, dust or any infection into the pleural cavity.

2. Prevents the dressing from becoming soiled by the drainage, thereby making it more comfortable for the patient.

The after care demands a consideration: (1) Stimulate

and nourish; (2) to see that the tube does not become obstructed, thereby facilitating the free escape of the fluid.

As long as the flow is free I never irrigate the cavity, but if the flow is very tenacious and does not flow freely then a weak solution of permanganate of potash or a normal salt solution is used to irrigate the cavity.

Strych. nitrate and syr. hypophosphites and nourishment are always instituted, and the patient urged to take plenty of fresh air.

THORACTOMIES.

Case No. 1.—Mollie J., age eleven years; white, history good. No scrofula, syphilis or tuberculosis in family. Was taken ill December 15, 1907, with chill. Fever 105 F., pulse 130, high arterial tension, a rapid respiration and severe pain in left side, complaining of aching all over body.

I examined the patient on the evening of the same date and found her with pneumonia of left lung.

The case ran a rather severe course to the eighth day when fever terminated by crisis and patient began to improve.

On the fourteenth day I dismissed the case, as the patient was now sitting up and very desirous of food, the cough having almost subsided by this time.

Six days later I was called in and found that three days after I dismissed the case she had developed a chill, rapid respiration and a good deal of fever, having a severe cough and unable to expectorate anything; dyspnœa marked and an inability to lie off of the affected side.

I found upon examination that there was slight obliteration of intercostal spaces, and heart was displaced to right as far as the median line of sternum, with dullness over the entire left side.

I introduced an exploring needle into the thoracic cavity and obtained nothing; whereupon I did not advise an operation.

Four days later I made another exploratory puncture and obtained a small amount of pus. I advised an immediate

operation, and on the following day Dr. Duncan and myself did a thoracotomy, going through the sixth interspace, between the mid-axillary line. We introduced a drain and, while at first the discharge was very slight, owing to the thick, tenacious pus, but by the third day the patient was discharging large quantities from the tube. The tube remained in situ three weeks and was removed.

The patient is well and in a fine physical condition, suffering no discomforts from the side, and has made a speedy and uneventful recovery.

Case No. 2.—L. A. L.'s child, female; age seven. Family history good. Father and mother living, two brothers and one sister; none dead. Child previous to the attack was very stout. Had never been sick, except measles at the age of two years, from which she had recovered.

January 25, 1908, patient was taken ill with pneumonia, which was treated by another physician. On April 1st Dr. Dorsett was called and diagnosed empyæma and urged an immediate operation. The family objected to this, and on the 14th of April I saw her with Dr. Dorsett and obtained the following history:

On January 25th child was taken ill with pneumonia in left side and was very sick for two weeks, then she began to improve, and at the end of the third week sat up in bed and called for something to eat. At this time she had no elevation of temperature and was getting better. At the end of the fourth week patient had a chill and a slight rise of temperature, pain in the side and difficult breathing, and a dry cough that worried her a great deal, but was unable to expectorate anything.

The case went on this way until the end of the eighth week. Child spit up quite a quantity of what the parents said looked like pus. Then she improved for a week, but from that time she grew worse up to the time I saw her, April 14th. Saw case and found extreme emaciation; temperature 101 F., pulse 140, respiration 46; skin cold and clammy and

bathed with perspiration. A very anxious expression on her face, and every few minutes she would have a paroxyism of a very severe cough and was unable to expectorate.

Physical examination revealed the following: Heart displaced two and one-half inches to right of sternum and upwards, obliteration of intercostal spaces on left side and œdematous.

Measurements revealed the following: Left side two inches larger than right. The abdomen was distended and the child was nothing but a bony frame covered with integument.

On April 15th Dr. Dorsett and myself did a thoracotomy, using very strict antiseptic measures; making an incision two inches long in the seventh interspace in the mid-axillary line.

A large rubber tube was introduced and anchored by ligatures. We removed five pints of liquid pus. The child's abdomen reduced and the heart became less irritated and the pulse less frequent.

We attached to this drainage a long tube which conveyed the pus to a vessel partly filled with an antiseptic solution.

The tube remained in situ for three weeks and drained freely all the time. Then we changed the drainage tubes, using a smaller one, and irrigated with a weak solution of hydrogen dioxide. The tube remained in situ for three weeks longer, making six in all. When there was no further drainage it was removed.

After the operation the child was put on syr. of hydriatic acid, nutritious diet and the open air.

This case made a good recovery and has gained in flesh a great deal.

I report the two cases to show the difference where earlier operation is instituted and where the case has been allowed to remain so long without surgical intervention.

MANAGEMENT OF THE THIRD STAGE OF LABOR.

BY B. R. GRAHAM, M.D., WALLACE, N. C.

After the cord has been tied and the child delivered to the nurse we must realize that the most important duty to the mother is yet to be performed, and upon the conscientious performance of this duty will largely determine the satisfactory progress of our patient during the puerperium and her future health and comfort. The improper management of this stage of labor jeopardizes the woman's immediate safety and may entail upon her a future life of suffering and invalidism.

Our first fear is post-partum hemorrhage, and as precautionary against this we immediately grasp the fundus of the uterus, and if it has not already contracted we encourage this condition by gently kneading with the open hand. The condition of the uterus is now carefully watched, the hand being applied to it at frequent intervals, but kneading is resorted to only when required. In the majority of cases after an interval of fifteen or twenty minutes the placenta has become spontaneously separated from its uterine attachment and has been thrown into lower uterine segment or upper vagina by the contraction of uterus, which is evidenced by that organ rising up against anterior abdominal wall and at the same time remaining firm and hard. The placenta is now expelled by grasping the uterus and making downward pressure in the axis of the superior strait, using the uterus merely as a piston to shove the placenta downward and outward. When the latter appears at the vulva it should be grasped by the right hand, which has been almost continuously held in bichloride solution, and gently removed. The membranes which follow are carefully twisted into a cord so as to prevent their being torn off from the margins of the placenta, after which they are slowly extracted.

We sometimes experience difficulty in expelling the placenta entirely from the vagina in this manner and under these circumstances I find it expeditious to introduce two or three fingers into lower vagina and seizing placenta by the margin make gentle traction to remove it. It frequently happens that small portions of the membranes may be left behind. If the ends be outside the vulva they should be seized and the remnants delivered by gentle traction, otherwise it is inadvisable to introduce hand into vagina in an attempt to remove them. Having removed the placenta we should reexamine the fundus and see that it remains firmly contracted, which condition is maintained at this stage by the administration of a dose of H. ext. ergot.

Having accomplished this we should now turn our attention to the condition of the perineum, which if patient is a primipera we will almost surely find lacerated to a more or less extent. Some authorities recommend that the perineum be repaired before the placenta is removed, but I see no special advantage in selecting this time. Lacerations are either complete or incomplete. The former extends completely through the perineal body and the sphincter and muscle and sometimes for a certain distance up the anterior wall of the rectum, giving rise to a cloaca into which both vagina and rectum open. The incomplete laceration does not involve any of the rectal tissues and represents the lesion with which we have to contend in the vast majority of cases.

The extent of the laceration can not be determined by a hurried inspection of the external genitals, but we must make our examination under the command of a good light, widely separating the labia and wiping away the blood from the posterior vaginal wall, make a thorough inspection, and we will frequently find a laceration extending an inch or more into the vagina or posterior wall and usually a little to one side of the raphe, sometimes on both, and of varying depth. Preparations should be immediately made for the repair of the laceration. The instruments needed are a half-dozen pair

of artery forceps, a needle holder, scissors and a short full curved needle. These having been sterilized, with a few pledgets of gauze, the patient is turned crosswise the bed, the hips down close to edge and each foot resting in a chair. The knees are to be held by assistants and operator seated facing patient. The external genitals are now thoroughly cleansed, the labia separated and a small pledget of gauze is passed into the upper vagina to obstruct the flow of blood and give a clean field for operating. We can now get a good view of the laceration, and using chromicised catgut as suture material the first stitch is passed near top of the laceration. The needle entering a quarter of an inch from the margin of the wound is carried down under the base of tear and emerges at a corresponding point on opposite side. Each successive suture is passed in the same way, and the ends caught by pair of artery forceps and held by an assistant until the cutaneous margin is reached. The rectum is protected from puncture while passing the sutures by introducing a finger of the left hand into the rectum, preferably the ring or middle finger, so as to keep as clean as possible the index finger. The sutures are now to be tied, beginning with the topmost one, and avoid tying tight enough to produce tissue necrosis. After the internal sutures have been tied and the ends cut we pass one or two sutures on cutaneous surface of perineum going well down into the body of the perineum so as to secure accurate coaptation.

The complete laceration is very rarely met with. I have had this complication to contend with in but one case only, a face presentation in a primipera with instrumental delivery. The laceration entered rectum and extended upward for an inch or more. The rent in bowel was first closed by continuous suture of fine chromic catgut beginning at top of tear and included all the tissues of rectum down to the submucosa, care being taken not to enter the bowel. The wound was now converted into an incomplete laceration and treated as such,

care being taken to carefully approximate the torn ends of sphincter.

The after treatment in these cases is simple. The bowels should be kept quiet until the third day and the genitals kept continuously covered by gauze pads wet in bichloride solution. Catheterization is unnecessary. Douchies are not indicated and the stitches drop out spontaneously.

THE THINGS THAT KILL WOMEN IN CHILD-BEARING, AND HOW AND WHY.

BY H. D. STEWART, M.D., MONROE, N. C.

Mr. President and Brethren of the Medical Fraternity of North Carolina:—My experience of ten years in the practice of medicine and my observation for many years impel me to the duty of entering a most solemn protest against the ignorance and carelessness through which so many lives are sacrificed each year by the avoidable, preventable death of the child-bearing woman.

In the first place let me lay down certain premises. Pregnancy is not a disease. It is distinctly a physiological process. Labor is not a disease. It is a physiological act. Beginning with a woman normally organized and constituted and continuing through pregnancy and confinement with such management and such prophylactic treatment as the best medical and obstetrical skill will afford, death should come to no woman in pregnancy or confinement, unless it should come from some intercurrent disease in which child-bearing is not directly concerned.

Not even should any pathological condition arise from child-bearing *per se*.

It was not intended that woman should be any but a natural creature.

If the pregnant woman could but use the wisdom of the brute, pathological changes and dangerous diseased conditions would not come with her approach to motherhood.

Parturition is that progressive process in the child-bearing life extending from the beginning of labor to the time the uterus is cleared of the afterbirth.

The puerperium is that period of childbearing extending from complete delivery to involution of the uterus.

Each of these three periods of childbearing is attended

with certain liabilities to disease and with certain dangers to the life of the pregnant woman.

Most of these changes are due, however, not to infection, but to pressure of the gravid uterus on the surrounding parts or to insufficient elimination of the waste products of the system.

Nature seems to have endowed the pregnant woman with a certain degree of immunity against infections and contagious diseases. She seems especially to possess greater natural immunity than the nonpregnant woman against typhoid infection and tubercular infection.

On the other hand the reverse is true during the period of lactation. During this period the vitality and the resisting power of the mother are so lowered by the milk-forming and the milk-giving process that she falls an easy prey to infectious diseases.

Especially liable is she to tubercular infection. Consequently she should secure more sleep and rest, more wholesome, easily assimilable food and more oxygen and sunshine than in any other period of her life.

I shall discuss in a specific way the chief dangers to the childbearing woman autogenetic or arising within herself and peculiar to her alone.

These troubles are such as are connected with childbearing solely.

I shall discuss in a generic way the chief dangers heterogenetic to the childbearing woman or such troubles as are brought to her from outside influences.

In the former class I would place puerperal eclampsia, placenta prævia and exhaustion from difficult or protracted labor.

In the latter class I would place puerperal fever, postpartum hemorrhage and long, difficult labor, neglected through carelessness or ignorance.

These four troubles and these alone—eclampsia, hemorrhage, exhaustion from neglect and puerperal infection—

are directly concerned and directly responsible in the death of the childbearing woman.

Of the four the most important by far is eclampsia, because it is at the same time the most common and the most fatal.

Eclampsia—Causes—Predisposing.—Excessive eating of nitrogenous and carbonaceous foods. Excessive ingestion and deficient elimination. Constant irritation of the kidneys by overwork and by strong stimulating waste products that must be excreted by this route cause an acute inflammation of these organs.

The mother overloads and overworks her vital eliminative organs and pathological conditions arise as a consequence. She eats very heartily. She lives a sedentary life, she fails to drink sufficient water daily, she neglects to stimulate the skin to action by hot baths. She fails or even refuses to take outdoor exercise to stimulate her eliminative organs and to tone and strengthen her nervous system and her muscular system.

She becomes chock full of poison. Her face swells, she becomes blind, but still she sits around and eats. Her ignorant husband lets all go by without a thought of the dangerous pathological conditions that are about to cause the wife's death. He neglects to call a physician or even to think of one until his wife suddenly has a fit. And often at this stage the services of the most skilled physician can be of no avail. The woman is so intensely poisoned and the eliminative organs so refuse to act that nerve and muscle sedatives and the most rapid eliminants utterly fail and the patient dies in spite of all.

The pregnant woman has laid the foundation for eclampsia. She has predisposed herself to the disease. She has stored up the exciting cause.

The added excitation of the reflex labor act touches off the powder and a series of violent, depressing, shocking, killing, convulsive explosions occur at intervals.

The husband is guilty of criminal negligence because he has not employed a competent physician to advise and to prepare his wife for this trying ordeal of bringing a human being into the world.

He could have had her urine thoroughly tested and all cause and danger of puerperal convulsions could have been removed.

The best way to cure eclampsia is not to let it occur.

How does eclampsia kill the childbearing patient? Uræmic poisoning acts on the motor nerve endings, producing puerperal convulsions. The uræmia that causes the uncontrollable convulsions also paralyzes the life centers of respiration and heartbeat, and death ensues.

Eclampsia occurring before labor or during pregnancy is hard to relieve because we have a physiological and a mechanical condition which obstruct and hinders very much the work of securing good elimination, and thus rapidly removing the cause of the convulsions.

Aside from the increased work of excretion occasioned by the process of gestation there is a natural hyperæmia, or congestion of the kidneys, which can not well be equalized except by removal of the contents of the gravid uterus.

Eclampsia occurring after labor is well in progress is easiest relieved because delivery soon comes naturally or can readily be effected, and the increased tension which the labor act has caused is removed, thereby greatly lessening the irritation of the nerve centers.

Eclampsia coming on several hours after delivery is the most dangerous and the most fatal of all because it means very grave pathological changes in the kidneys that are often beyond remedy, and a weakened patient of lowered vitality to work upon.

The second dangerous, often fatal, trouble connected with childbearing *per se* is placenta prævia.

Causes.—Ectopic attachment of placenta from the beginning of its development, violent contractile movements of the

uterine muscular walls from muscular effort in lifting tubs, water-pails and other heavy objects. The pregnant woman may detach the placenta by reaching above her hanging pictures or curtains, thus contracting the walls of the uterus.

She may throw the placenta loose from its normal attachment by staying on her feet too long and too much in the pursuit of social functions. She may subject herself to the jar of a wagon or a buggy over rough roads, or of a railroad car, in traveling from place to place.

The terms placenta prævia mean afterbirth out of its natural way or place.

Its natural place is in the upper segment on the posterior or anterior wall of the uterus. When the placenta is so out of place as to overlap slightly the internal os before the os is dilated it is partial or lateral placenta prævia. When the body of the placenta entirely covers over the internal os it is central placenta prævia. Endometritis and multiparity are supposed to be predisposing causes of placenta prævia.

How does placenta prævia kill the patient? It kills her by fatal hemorrhage, either coming on suddenly and unexpectedly and being so excessive as to cause death, or by several hemorrhages occurring at intervals and within a period of some days or weeks, and ending up with a regular draining of the life-blood.

When the hemorrhage comes on in great abundance without premonition the skill of the very best obstetrician is often taxed to the utmost, and even when he is near at hand, promptly secured and does his best, his services are sometimes of no avail.

The sudden, excessive cases are apt to be due to central placenta prævia.

How often is a pregnant woman, apparently in the pink of health and free from all harm, ushered at once into the presence of death. On the other hand, when the hemorrhage occurs at intervals for days or for weeks, the husband may be guilty of criminal negligence in not calling a physician

promptly. The physician called may be guilty of criminal negligence or of criminal ignorance by temporizing and tampering with dangerous conditions.

It requires knowledge, skill and nerve to do a rapid premature delivery or a rapid delivery at term in the face of a stubborn placenta prævia hemorrhage.

When a pregnant woman discovers the slightest hemorrhage her husband or whoever is responsible for her should call a competent physician at once. She should be placed under the very eyes of a good obstetrician, either near his home or office or in a good hospital, and in either event near a good consultant obstetrician. She should never be left to her fate far away in the country.

The busy practitioner should never allow his rush of business or his eagerness for business to lead him into criminal negligence, with the sandy hope that nature will take care of the case and he will get the credit and the pay. Many a woman has lost her life through the delay and the carelessness, not to say ignorance, of her physician.

The third trouble that sometimes kills the childbearing woman is *post-partum hemorrhage*. This is hemorrhage occurring after delivery.

Causes.—Indiscriminate use of ergot, chloroform and some other drugs before delivery; anatomic, noncontractile condition of the uterine muscular wall; exhaustion and paralysis of the uterus from prolonged labor or from excessive use of ergot and other drugs before delivery, resulting in a boggy, relaxed condition of the organ.

Then again some patients die because no physician is at hand in time or because the doctor called has not the necessary knowledge and skill, or has not the necessary remedies and appliances to stop the hemorrhage.

The Fourth trouble that kills the childbearing woman is puerperal fever or infection, or more particularly *puerperal septicæmia.*

Cause.—Direct cause is infection with the streptococcus

germ, resulting in a general systemic blood poisoning. This infection is heterogenetic and comes from the carelessness and ignorance of the midwife, the nurse, the doctor or of the patient herself, or from previous introduction of the streptococcus into the vagina or uterus by nurse, patient, doctor or husband.

Predisposing cause—lowered vitality and lowered resisting power of the patient from any cause—poor nutrition, excessive, hemorrhage, diseased endometrium, devitalized blood serum, etc.

The source of the infection may be decaying, fermenting membranes, blood clots and other debris left behind by the midwife or the doctor. She dies by systemic blood poisoning or septicæmia.

The last trouble we shall notice is death of the childbearing woman by exhaustion during labor or just after a long, difficult labor.

Many a woman has lost her life while an ignorant, presumptuous, pretentious midwife sat by dipping her snuff or smoking her pipe, waiting for nature to take care of the patient.

There is no excuse for death by exhaustion in a woman otherwise normal. Death from this cause occurs where a midwife has attended or where a competent physician has been called too late or where from some other cause delivery has been too slow.

Summary.

There should be a State law requiring every midwife to stand and pass a good examination on anatomy, physiology, obstetrics and obstetric nursing.

Every husband of a pregnant woman or whoever is responsible for the welfare of the childbearing woman should be required by law to call an honest, competent physician in any case of abortion, or in any case of pregnancy even that seems to be progressing naturally. This physician will, of course,

use all precautionary measures necessary to prevent death by disease or by accident. An abortion should be considered as of as much or more importance than a full-term labor because the patient is more liable to hemorrhage and to infection.

Criminal abortion should be detected and prosecuted with the limit of the law, and the law should know no bounds in these cases.

We note that four troubles and four alone connected with childbearing *per se* cause the death of the mother. These are eclampsia, hemorrhage, prepartum or post-partum, puerperal septicæmia and exhaustion. These can all be traced directly or indirectly to ignorance and carelessness on somebody's part.

No doctor nor midwife who is not prepared to meet and to take care of these four troubles should be allowed to practice midwifery. There should be medico-ethical and medico-legal regulations to meet each case in which a woman's life has been uselessly sacrificed.

A MONSTROSITY.

BY J. W. NEAL, M.D., MONROE, N. C.

On June 26, 1907, I was called to attend Mrs. W. Found her in the first stage of labor. Presentation vertex, O. L. A. Progress perfectly normal. After about one hour a girl, weighing six and one-half pounds, well developed and perfectly normal in every respect, was born. The uterus did not come down at once in size as usual. Upon examination found that there was another fœtus, though evidently much smaller than the first. Presentation, breech, S. R. P. After some twenty minutes pains came on; membranes ruptured spontaneously; hips delivered in a few minutes; body descended rapidly and rotation effected. There was not the least stop in the expulsion until the entire fœtus was expelled, when, to my astonishment, I found that it had neither head, face nor arms. There were apparently no cranial, facial or even cervical bones; no eyes, ears or nose. Just above the upper end of the sternum there was a small cleft bounded above by a small cartilaginous ring, rather angular or pointed at the top, giving the cleft a triangular appearance. This cleft we judged to be an abortive effort at a mouth. On either side and a little back of this cleft there was a small lobe almost perfectly spherical, one about three and the other about five lines in diameter, attached by small pedicals from one to two lines in diameter. The upper end of the trunk was rounded off smoothly except for the rather abundant and loosely adherent skin, which was covered with hair. There were no marks pointing location of eyes or nose, and the two small lobes on the sides of the cleft the only suggestion of ears, and there were no *meati* at or near them. At the points on each side of the trunk where we should look for arms there were no appearances of any attempt at arm-formation, but instead just at these points there were small dimples. The remainder of the body seemed normal. Sex, female. Genitalia well formed

and normal. Lower limbs well formed and normal except the feet. Each foot had just four toes. The toes on the left foot were normally in line, but on the right foot the great toe was placed so as to come more in opposition to the other three like the thumb. The fœtus was kept alive until delivery, of course through the cord, but I noticed no movements of either limb or any part of the body after expulsion. There was no pulsation of cord nor effort at respiration. Weight of fœtus two and one-half pounds.

There was one placenta but two amniotic membranes. The cord was small and had its origin near the center of the placenta and near the origin of the cord of the other fœtus. The cord was very tortuous, ran along on the surface of the placenta to its margin and then was continuous with and attached to the membranes for about three inches further.

I forwarded the specimen to the National Museum, Washington, D. C., and received the following report from Dr. T. T. Russell Assistant Surgeon U. S. A., who reported as follows: (Report herewith attached.)

13584. Contributed by Dr. John W. Neal, Monroe, N. C.

Omphalosite.

Omphalositic fœtus weighing 2.5 lbs.; one of female twins born at term. The autosite weighed 6:5 lbs. and was normal, born alive and continued to live and grow.

The omphalosite shows the following anomalies: some increase of connective tissue, though but little œdema; one large lacuna beneath scalp; small skull; rudimentary upper limbs, which do not appear externally; persistence of facia fœtal processes; wide open mouth; absence of eyes; ears represented by tags of skin; small thoracic cavity but absence of heart; lungs rudimentary and no pleura; absence of pharynx, œsophagus, diaphragm, stomach, duodenum, liver and pancreas; portion of intestine one inch long blind at each end; another portion of intestine blind at beginning, and ending at anal opening and following largely the median line; spleen present, as also uterus and right ovary; external genital organ well developed; allantoic canal bladder well marked but kidneys not made out; club feet and anomalies of toes.

At this date, nearly twelve months later, the twin sister is still living and growing nicely.

SOME OBSTETRICAL MONSTROSITIES IN COUNTRY PRACTICE.

BY G. L. SYKES, M.D., SALEMBURG, N. C.

Mr. President and Gentlemen of the Society:—In presenting this paper upon so broad a subject, there can be no reasonable excuse for its shortcomings save my inability to express to others in composition my knowledge and experience of which I have had ample occasion to obtain some very interesting facts in this branch. The old adage you remember, "Poor folks abound in children and gourds," and of such my country is rich.

However, the few gleanings that shall follow are some of the early as well as late monstrosities of an eight years experience out in the country eleven miles from any other medical assistance, and until recently not even phone service, to assist you in early consultation in an emergency.

So, gentlemen, one main purpose in this paper shall be to give our city and town brethren a short sketch of some of the monstrosities out in rural districts as are being met with daily by your less fortunate country brethren, and how we meet them. Also as an individual or selfish motive, to gain that criticism, comment or commendation as this paper may deserve, and as shall help to make me more efficient in the management of those difficult problems, quicker to diagnose and more ably treat than I have done in the past. Also, if in this effort I may help even one physician to gain a similar knowledge, or even stimulate one to a keener sense of duty in those things, I shall feel doubly repaid for this effort for the sake of humanity.

I can not in reasonable space and time do so broad a subject justice and cover every monstrosity met in my experience were I the best compositionist in expressing the most in the lesser number of words.

Therefore I can only sketch a few which have called forth much nerve, anxiety and self-confidence to handle alone, together with methods employed, treatment and results.

The first monstrosity I found to solve as a young doctor—and I find it holds good in the general practice as well and even haunts me until this day—is this:

How to Value My Services. How to value my services so as to conform with that of other physicians of my county, and how to make my services as efficient, or more so if possible, and thereby gain my patients' highest esteem and respect was the question; and this I considered the necessity to prompt them to an early and much-needed settlement of accounts.

This difficulty, gentlemen, was due in great part to lack of cooperation of physicians, but now our county societies are aiding us all along this line, and especially our young doctors, just falling in ranks.

By cooperation in society work we are better able to favorably compare, value and estimate our own work and also to better educate the laity to value and esteem our profession as a whole.

Pardon me for thus, commercially and socially, digressing from a strictly obstetrical problem. I will now consider my first.

What is My Duty to the "To-be-mother?" A physician engaged by this class of patients has a most peculiar as well as sacred responsibility. They will and rightly so, too, engage our services three and four months prior to delivery. We then are in a sense responsible for a normal travail and delivery, not that there shall absolutely no trouble arise, but in the sense of preventive medicine there is much that we may do; and if we are not alert to our duty we are deserved of serious censure. In this connection I shall necessarily touch on puerperal eclampsia as well as outline some remedies for the "granny question."

If we are more appreciative of preventive than curative medicine then, in this field, we certainly have a chance to do

some most noble work. If we are not more appreciative of preventive medicine than curative, then we do not measure up to the highest professional spirit. In the spirit of preventive medicine I beg for the sake of suffering humanity that each of us carefully examine ourselves to see if we have been measuring up to the requirements of this class of patients.

Our services having been thus engaged we give them no further thought or consideration until the summons comes to hasten to the woman in labor, and we forward march, only to find, perhaps, our patient in hard convulsions, should be, it seems to me, sufficient evidence that we are unworthy of the honors entrusted to us, and that we have actually cast a reflection upon our profession. Such a physician is unworthy of even the respect and honors granted the "granny" woman, for even she shows more sympathy, care and interest in her patients than this. Our failure just here as physicians may be one of the great reasons as to why such a great per cent of labor cases are entrusted to the "granny" instead of to the physician.

Let us then use this magnet and draw the greater number of cases in the channels they should go and thus, by better skill and knowledge, save so many mothers the needless disasters they are daily meeting; and with our skill and knowledge rightly and justly used we will easily and rightly eradicate the "granny" problem.

If the etiology of eclampsia is due to the retention in the system of urea, carbonate of ammonia, microbic infection or to whatever retention in the system it may be, it is evidently for want of proper elimination of those products by kidneys, liver, or perhaps both, and might thereby be prevented if looked after in time. Then, in such cases as occur under the "granny" woman's care and to which our services are demanded, let us have so clear a record that we can hold up to the family and friends (and at such a time there are many) that shall plainly show the advantage they might have had

had they employed a physician in the case in due time to have prevented this trouble.

The kidneys in pregnancy are very prone to become inefficient to the extra duties of excreting the excrementitious matter from both the mother and the fœtus, by reason of nephritis, increased intra-abdominal pressure, or direct pressure upon the ureters; if then the physician will bear in mind that the kidneys may be diseased, and yet functionally sufficient, or that they may be healthy anatomically, but functionally insufficient for their increased work, and he is alert to help his pregnant patient as he should, may he not do much in the prevention of grave troubles?

I will not dwell on this important subject of preventing puerperal eclampsia as this subject has been or is to be well discussed by other papers directly on this subject.

There are two other subjects I wish to dwell on under preventive medicine in obstetrical practice. Not the disease *per se,* but the evil consequences of these diseases, and as such were monstrosities in my practice. I refer in this to gonorrhœal infection and diabetes mellitus, and illustrated by report of cases.

Case No. 1.—Mrs. N. L., age 30. On January 13th I was called to see this lady in labor. I arrived about 11 a. m., and found she had been in labor all the night and had been losing the amiotic fluid all along for three or four days. She states further that she had had quite a profuse leucorrhœal discharge for seven or eight weeks, with the most intense itching imaginable, both in vagina and externally; but that the discharge during the last few days has not been the same color as before nor as regular, but more watery-like and only two or three times a day. She was then having pains about every thirty minutes and said she itched so bad she could hardly endure it. As soon as I could give her a bath of external parts and prepare my own hands I made digital examination, and found that the entire vaginal vault as well as the vaginal mucous membrane of the cervix was thick and richly beset with rough

dry pimples, so rough and dry was it that I can not better compare it than to the dorsal surface of a beef's tongue. I found in her past history that she had been anæmic, stout, and weighed 200 pounds and over until two years ago, when she gave birth to her first child; since that time she has not weighed over 156 pounds. This child was a full-term child, stillborn and bones of head only partially formed, but head was one-third larger than normal she states, and was like a sack of water. (I judge hydrocephalus.)

Considering the best history I could get of the lady and that of her husband also, and from the fact that it was a quiet country home, and after suppressing my first opinion from my digital examination, I jumped at the conclusion that I had a case of "Hirst's" so-called colpo-hyperplasia cystica, in which he describes a hypertrophied condition of the vaginal mucous membrane, thickly beset with retention cysts, in which the mucous dries away and is replaced with pus. This case progressed under my own eye for three hours only to worry the mother and no progress, even with the aid of ten grains of quinine. At this time I began the use of stimulants, such as hot coffee and spirits. Four hours passed and no progress made. My forceps were sterilized and the work soon and easily accomplished.

As before stated, my suspicion was greatly aroused upon my first examination, but in all my infirmary practice while in college among the low classes I never met with such a condition as this, even where we knew specific infection was present in the majority of this class of cases. I purposely used no specifics in the dressing of the child's eyes to aid me in clearing up the diagnosis, which it promptly did in a couple of days, for ophthalmia neonatorium was beautifully developed and promptly disappeared upon the application of a two per cent solution of nitrate of silver. On the 16th, following, fever developed, 102, slight rigors, nausea, coated tongue and much tenderness over the pelvic region, with some aching and characteristic odor about the bed. I was called,

and not having the time that evening to give local treatment myself I gave calomel, followed with free saline purgation, quinine and febrisol for fever and pain. I had the nurse to give a hot S. S. douche and put a hot poultice over the lower abdomen.

On the 17th I was sick and could not go and sent permanganate of potash to use in the douche morning and evening. On the 18th I went to see patient and found temperature 103, with above symptoms plus a very tender left thigh, some less nausea and a better appetite. We prepared and gave an intra-uterine douche, very low hydrostatic pressure, using first the normal saline solution, then the iodide of mercury solution 1-3000, followed by a normal salt solution; continuing the internal treatment and a liquid diet. On account of an attack of lagrippe I was unable to do any practice, and hence the case was not seen any more until February 12th, when I made my next visit, only to find upon a vaginal examination a nicely-developed case of piosalpinx. I thought it my duty to tell her the seriousness of her case and explain to her the imperative need of an early operation which we did, and was accepted by her, and I made intercession for her with a surgeon at a hospital and she was sent to him on the 14th with a full history of the case and my diagnosis. This good doctor did not operate at all for the following reasons: She had no fever, heart weak and the pus sack he says had in the meantime ruptured and was walled off, and hence no imperative danger since general improvement seemed to be in progress; therefore he thought best to take the conservative plan. On the morning of the 22d her nurse went in to see her; she stated that she had taken a good night's rest, felt as good as the evening before, when she had written her husband that she was improving fast and hoped in a few days to be able to return home well, and with some greetings to her family and friends. The nurse left her to return in one hour only to find her dead.

Gentlemen, I feel that I fell short of my duty in this case

in that I did not accept my first convictions and begin to hunt other excuses and causes for the conditions I found upon my first digital examination. I feel like that had she been properly douched and treated during the four hours I was waiting for and trying to help nature to start up labor, that perhaps all this fatality could have been prevented. This my conscience censures me with reproach and I have promised to profit for future benefit by this error. And I feel, too, that my good friend and surgeon is none the less in fault for this fatality for not having operated early. If it was ruptured and walled off, then drain; if not, then remove. But let us all profit by our unavoidable mistakes and try to make as few mistakes to profit by as possible.

Troubles, as you know, always come in triplets; so following this case I had another very peculiar and rare case. Mrs. P. F., age thirty-six, developed symptoms somewhat similar to those given in above case before delivery, together with pyrexia, sore mouth, constipation, freely-acting kidneys and cough. Being mindful of the above case I gave husband a most rigid examination and was unable to satisfy myself as to any specific trouble. Having examined patient I decided that it was poor elimination due to cold and biliousness. I gave her some eliminative treatment and an iron tonic with some digestive ferments; asked that she report in a few days if not doing satisfactorily, and also to send me the quantity of urine voided in twenty-four hours and a sample of same. This she did not do, and I heard no more of this case for four weeks, when I was summoned in haste to see the lady supposed to be in labor. I knew this was a false alarm from my previous visit and history. But upon my arrival I found one of the most miserable beings I have met in all my life's practice. Wringing, twisting hands, scratching and crying can't lie, can't sit, out of breath, and in every way miserable. Well, I was most miserable, too, for I could not easily decide which was really my duty, to abuse her and her husband for not obeying my directions on first visit, or to sympathize and try again to relieve.

I looked at the miserable being, examined her in every way, and found that she was not in labor, but that she was at least a month to term according to all symptoms and her own count. I obtained a specimen of her urine and asked her husband to come to my office at once and I would tell him what we had to do. After giving my patient a hypodermic of morphine I hurried to my office and examined the specimen of urine and found it very rich with sugar. So this cleared the diagnosis for me, and I told her husband that to save her life I thought best to produce miscarriage, and to do this was rather more than I cared to undertake by myself and that I wanted consultation. This being granted, I sent for Dr. Holmes to meet me next morning. He came, examined and agreed with me upon my diagnosis and proposed treatment. All necessary arrangements were made, we thoroughly douched vagina with mercuric iodide solution 1-2000, forcibly dilated the cervix to size of dollar with instrument and introduced a sterile catheter through cervix into uterus, packed vagina lightly and left patient for six hours to await results. Upon our arrival in ten hours we found that no progress had been made. We then resorted to the usual uterine stimulants and worried with the patient trying to induce labor till next day, making twenty-four hours effort; but all in vain. So we proceeded to deliver with forceps, which was accomplished with no little difficulty on account of an anterior parietal presentation. This, however, was accomplished, fœtus dead, but mother made a slow and steady improvement for seven weeks, when I gave her careful directions about diet, etc., and discharged the case, there being no glycous urea at this time.

Since writing up this case I called to see this lady to obtain her present condition. She had, as soon as discharged seven weeks after delivery, resumed her regular diet and general household duties and was, on the 12th inst., when I called for this history, preparing to cook a big farmers' dinner.

I asked her to allow me another urinary analysis, and if she would I thought from her general appearance that she had

best come with it and let me examine her generally, for she looked awfully bad. She kindly consented and came with a specimen of twenty-four hours urine. I find she is voiding about 59 to 60 ounces per day. Urine showing the following analysis, viz: Color, pale yellow; reaction, neutral; sp. gr., 1.008; no sugar; a little trace of albumin; very frequent micturition; pulse, 100; hard and incompressible, flatulent indigestion; general weakness and drowsy feeling; much pruritus at menstrual time, which is very scanty, but profuse leucorrhœa. With this brief history I am quite sure now that I have a case of nonexudative nephritis and that my diabetes mellitus in the pregnant stage was only an aggravated condition of a preexisting nephritis.

The lesson then I have learned and hope to impress by the two above cases is this: Anæmic and gonorrhœal infection so closely simulate the anæmia and symptoms of diabetes mellitus in pregnancy that it should demand the most careful attention of the physician, and that an early differential diagnosis with the proper treatment will do much in the preventive sphere of medicine, and it will save much needless suffering as well as lives.

My next and last monstrosity for consideration in this paper is puerperal paralysis. As my paper is now too lengthy I will make this case as short as possible. This was a case I had given very careful attention for two months prior to delivery, and while I lost the mother I am quite sure I have a living child as the result of those efforts.

Mrs. A. H., age twenty-six; mother of three children before this one. I had attended her in all of them and all of them were normal labors except the second labor, which I had to deliver with forceps on account of partial uterine inertia, due to unusual size of child, over-distention of uterus, child weighing twelve pounds. Some weeks prior to the fourth labor she had been complaining of intense headache, drunk feelings, buzzing in the ears, cramp in the legs and a general œdematous condition, and as some authors class dropsy by

locality, thus: that if in the entire system, kidneys at fault; if in the feet, the heart is at fault, and if in the abdomen, the liver; hence, in this case, I diagnosed inefficient kidneys and was looking for eclampsia to develop. The facial neuralgia and intense headache I could not relieve; it lasted her three days prior to, during and after delivery. Morphine in one-fourth grain doses would give only moderate relief. I am quite sure she had the quickest and easiest time she ever did; she only had three real hard labor pains and the work was complete. I noticed after delivery for thirty minutes she seemed to be easy, but she soon began to complain of that headache more and more. For fifteen minutes or more she seemed to be semi-conscious. This passed off with a clear mind and the clearest of headache she had been for days; but soon a profuse hemorrhage came, and she asked for food soon after this hemorrhage ceased. I remained with the patient for four hours after delivery expecting eclampsia, but no further symptoms except the headache developed, for which I gave a cerebral sedative of chloral, bromide, gelsemium and opium. This was to be repeated every three or four hours. This was on Saturday morning, and no further report till Monday morning. This report was that she was all right except very restless and could not sleep and still had some headache. I directed the use of this cerebral sedative and called to see her in the evening. She was given one dose of the sedative at 9 a. m. and grew worse, and at 11:30 the dose was repeated, and then she rested better; but by 1 p. m. she was taken with word blindness and could not speak what she wished to, but the opposite. She had become bloated in the face and the bowels had not moved since birth of child; temperature normal, and pulse fairly good. I stopped the sedative, gave calomel and seidlitz powders. I was again summoned that same evening at 11 o'clock and found her entirely unconscious, speechless, ptoses of left eye and pupil diverged down and to left; pupil of this eye widely dilated and that of the right partially dilated and right deviation. Sensation in right arm and leg lost and partial if not complete lost motion. Comatosed con-

dition gradually progressed till life expired in about forty-eight hours. This condition I attributed to intracranial hemorrhage; but just the cause of intracranial hemorrhage I can not fully satisfy my mind, unless it was the hard labor in some previous deliveries causing some aneurismal pressure and at this labor ruptured; and if so, then this is one good plea for early instrumental interference in slow, hard and protracted labors from whatever cause.

HISTORY OF CASE OF HYDATIDIFORM MOLE.

BY J. M. WILLIAMS, M.D., WARSAW, N. C.

Among the first cases of my obstetrical experience I was called to see a woman of whom it was said she was dying from hemorrhage. History indicated that she had been pregnant nearly three months; that she had been suffering from hemorrhage for seven weeks and using only such remedies as the granny might offer during this time. Had given birth to one or two children without difficulty and with no indication of disease up to the present pregnancy. Age twenty-four. Shortly after conception it was noticed that the abdomen increased in size very rapidly, until now, at less than three months from conception, inspection would indicate full-term pregnancy.

Bimanual examination proved only the presence of a boggy mass, no dilatation of the os, but a constant oozing of blood that was threatening the life of my patient, with no discharge of cysts that might be expected.

Without a consultation and with no experience of this kind I did not want to terminate pregnancy; but it appeared that something must be done at once or my patient would bleed to death before any consultation could be gotten. So I at once prepared to tampon the vagina. First packing the cervical canal as tightly as I could with sterile gauze, I then packed the vagina and put on a T bandage.

The hemorrhage was completely arrested, and after twelve or fourteen hours active labor pain came on. I removed the tampon and with it an enormous mass of cysts, perhaps nearly as large as a man's head, but no embryo could be found. The cysts varied in size, some as large as a chestnut.

The diagnosis of this rare disease is sometimes difficult and depends on the discharge of cysts that can be recognized, also on the hemorrhage with history of rapid growth of uterus.

The treatment of it is immediate removal, as early as it can be recognized, by means of the aseptic finger.

The curette is said to be dangerous on account of the thin walls of uterus, which this growth may have penetrated, even into the abdominal cavity.

There is an immediate mortality of ten per cent from this disease, while fifty per cent develop deciduoma malignum, or chorionic epithelioma, destroying life in less than twelve months. Hence the necessity for early removal has been urged by Williams, of Johns Hopkins; also that the patient be watched for months after labor for the development of this most terrible disease.

HYDATIDIFORM MOLE (MYXOMA CHORII) WITH REPORT OF CASE.

BY J. B. CRANMER, M.D., WILMINGTON, N. C.

In writing this paper it has not been my purpose to touch upon the histology of the chorion, nor to dwell at length upon the pathology of the hydatidiform mole.

I do not claim to be giving you an original treatise; this is largely a resume of the subject, with the report of an interesting case.

The degeneration (aside from the normal process of atrophy) that may affect the chorion villi is of two kinds: cystic and fibro-myxomatous. This paper has to do with the first—cystic degeneration of the chorion villi.

This pathological condition is characterized by hypertrophy of the chorion villi, and by their conversion into cysts, varying in size from that of a millet seed to that of a grape, or even to that of a hen's egg, connected with one another and with the base of the chorion by pedicles of varying breadth. The ovum grows rapidly, with consequent expansion of the uterus. There is escape of blood from the uterine cavity to the vagina, and a premature expulsion of the ovum, which is covered with small, transparent cysts. An embryo may or may not be found.

There has been much discussion of this condition by reason of the mystery which formerly surrounded its origin. Even at so early a date as the sixth (6th) century papers with no very clear idea of its nature were written upon this subject. DeGraaf held that the vesicles were *mature ova,* while some authors thought that each one represented an early pregnancy.

It is probable that many of the extraordinary cases of multiple gestation recorded in the early literature were instances of the hydatidiform mole, as, for example, that of the

Countess of Hagenau, who was believed to have given birth to three hundred and sixty-five (365) embryo at a single labor.

Priestly goes so far as to quote (in reference to this case) from a writer of that time, "that the Countess Margaret brought forth at one time three hundred and sixty-five infants—one hundred and eighty-two males, one hundred and eighty-two females, and the odd one an hermaphrodite." This as late as 1276 of our era.

Pepys even records in his diary that he visited the house in which this remarkable delivery occurred, and saw the *brass platters* upon which, according to a custom of the day, the children were carried before the bishop of the diocese for baptism.

Numerous theories have been advanced as to the nature of the lesion until Virchow, in 1853, stated as his belief that the process was essentially a myxomatous degeneration of the connective tissue of the chorion villi, and designated it as myxoma chorii.

Marchand, however, in 1895, held that the essential feature of the affection was to be found, not so much in the stroma as in the epithelial covering the villi.

The process occurs at a time when the villi are almost equally developed over the whole ovum, before the third month, and involvement of the whole villi is the rule. Sometimes the placenta alone is affected. In this morbid process it is important to know that the cells of Langhan's layer and the syncitium display an exuberant growth, showing a decided inclination to penetrate uterine tissue; therefore the relation of myxoma of the chorion to syncitial cancers is quite intimate, and in a large proportion of the latter growths there is associated a cystic disease of the chorion villi. There may be metastasis of the whole chorion villi without malignant degeneration of the epithelial cells, or the chorion epithelium may undergo malignant degeneration after metastasis.

Aside from the possibility of the development of a deciduoma malignum, the hydatidiform mole is a serious affection.

Dorland, for example, noted a mortality of ten per cent with the one hundred instances which he collected from literature.

As I said before, the prominent symptoms associated with cystic degeneration of the chorion are:

First.—A rapid increase in the size of the uterus.

Second.—A discharge of blood, or bloody serum; and

Third.—An escape of vesicles.

This last symptom is of rare occurrence, and the first is not always typical, so that the clinical phenomena in the case of vesicular mole do not always admit of a definite diagnosis.

None of us cares to make a practice of reporting single cases but, as few of us have an opportunity to see many *like cases,* we may be pardoned for making occasional deductions from our individual experiences.

A case which came to me a few months ago has awakened my interest on this subject. Mrs. W., age twenty (20); family history, negative; personal history showed previous vigorous constitution. Married ten months; menstrual period having been missed for five months. Slight hemorrhage, pain and discharge having occurred once during this period, at which time patient was kept in bed by her attending physician, under usual treatment for prevention of miscarriage. August 30, 1907, I was called for the first time at 12 o'clock, midnight, to what was reported to me over the phone as a "miscarriage case." Upon arriving at the house I was told by a woman present that "it was all over." I found the patient flowing profusely, having already expelled a quantity of grape-like masses. To be sure that the uterine cavity was entirely emptied I made pressure above, and another large mass of like character was expelled. The hemorrhage was continuing to an alarming extent. Giving hypodermically 20 minims of ergot, one-thirtieth (1-30) of a grain of strychnine and one-eighth (1-8) of a grain of morphine sulphate, I made careful digital examination as soon as it was practicable. The uterus was found much enlarged, flabby, and the cervix patu-

lous. Small particles of the grape-like masses were found adherent to the uterine walls. With lightest possible touch and dullest rinsing curette I went over the walls of the uterus, and washed out the cavity with weak antiseptic solution. The hemorrhage was almost immediately controlled.

The patient made a good recovery and is now in perfect health, although still very much impressed by the information I gave her as to the rarity of such cases, seeming rather proud of being, according to Madam Boivin, a case in twenty thousand.

PUERPERAL ECLAMPSIA.

BY E. F. STRICKLAND, M.D., BETHANIA, N. C.

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

In answer to a request, coming from the Secretary of the Society and from the Chairman of the Section on Obstetrics, to present a paper at this meeting, I stated that it would be my pleasure "to hear rather than to be heard" on this occasion.

However, yielding to a sense of duty, I ask you, in the same spirit, to hear me discuss, briefly, that old, old subject, though ever new and of the keenest interest to the obstetrician and general practitioner, viz, "Puerperal Eclampsia."

Puerperal Eclampsia is an acute disease, which may occur before, during or after delivery. As its pathology is more or less unsettled, its etiology theoretical, its treatment is largely empirical. Without recounting the varied and many theories advanced, both old and new, concerning its nature and etiology, suffice it to say that it is now generally conceded, I believe, that auto-infection during the pregnant or puerperal state is responsible for the condition—the eliminative powers of the kidneys and liver being principally at fault.

The functionating powers of these organs may be impaired primarily as a result of accumulating toxins due to pregnancy or, the pregnancy may be added, as a complication to a pre-existing parenchymatous degeneration of these organs. A true nephritis may exist or may not. Albumin is usually found in the urine,—casts frequently.

The pathological changes in the liver are now regarded as more characteristic and constant than those of the kidneys. Hemorrhagic hepatitis, fatty degeneration and disorganization of the liver cells are found on post-mortem examination.

That plural births, a nervous temperament or heredity are predisposing causes my own experience does not confirm.

I find that primipara are more frequently attacked than multipara. Nature's ineffectual effort to rid the system of the excessive materies morbi, in consequence of the impaired and sluggish functionating powers of the emunctories and the stagnant channels of elimination, is an all-sufficient cause for the gradual development of the eclamptic condition, or the sudden outburst of the fit itself. The premonitory symptoms are œdema of the lower extremities, hands and face; headache; dizziness; a "boring pain in the pit of the stomach"; disturbed vision, sometimes amounting to blindness; a capricious appetite; usually constipated bowels; a diminished flow of urine, which usually contains albumin.

Whether these symptoms come as the rattle of the rattlesnake, and as surely speak of danger ahead, or whether with the suddenness of the spring of the cobra, and without warning, the attack is the same, and the struggle between life and death is at hand.

The spasm once witnessed can never be forgotten, and there is no mistaking the diagnosis. They last, usually, from one to three or four minutes, when there is a complete relaxation of all the muscles for an interval varying from a few minutes to a few hours, when there is a return of the spasm, if the condition is unabated.

In the intervals between the attacks the patient is in a state of partial or complete coma, depending upon the severity and the number of the attacks. The number of spasms may vary from one to one hundred.

Usually there are from six to thirty. Death is liable to occur either during a convulsion or in an interval between the attacks,—in the former from asphyxia, in the latter from the combined effects of asphyxia and exhaustion.

It has been reckoned by worthy authors that one per cent of pregnancies result in eclampsia, that 25 per cent of these prove fatal to the mother and 50 per cent to the child.

The per cent of cases actually occurring, and this large mortality rate have been much reduced of late years by a

better understanding of the disease and the application of a more rational and active plan of treatment than hitherto was practiced.

The treatment will be spoken of under two heads, viz: (1) Prophylactic; (2) Active. In no disease is the maxim more true, perhaps, that "an ounce of prevention is worth a pound of cure" than in puerperal eclampsia.

The urine should be frequently examined during the latter months of pregnancy for the detection of the presence of albumin, and albuminuria in connection with the premonitory symptoms already described, should lead to the employment of a prophylactic treatment at once.

The diet should be restricted to milk, if possible; the skin should be kept active by hot baths, hot packs and friction; systematic open air exercise should be instituted; the bowels should be kept in a lax condition by the administration of Rochelle or Epsom salts, with an occasional calomel purge; the kidneys should be kept active by the administration of an abundance of the best and most reliable of all the long list of diuretics, viz, plain, simple water; infusion of digitalis may, also, be given if desired. Give Basham's mixture or Tr. of the per chloride of iron, for their diuretic and tonic effect.

This is all that can be done in the way of prevention, and, if in spite of this, the attack develops before, during or after delivery, we are brought to the employment of what I have designated as the "active treatment." Chloroform inhalation should be practiced to lessen the severity and frequency of the convulsions. Venesection should be employed to relieve arterial tension and lessen the pulse rate. Morphine in one-fourth grain doses should be administered hypodermically and repeated as indicated.

Chloral in thirty-grain doses may be administered per rectum, and repeated if necessary.

The attack occurring prior to delivery is usually amenable to this plan of treatment, and the patient will go on to term. If the case is intractable, however, pregnancy should be termi-

nated by dilating the os with the best dilator ever used, namely, the fingers and thumb of the practiced hand, or one of the various instruments used for this purpose, than which none is superior to the invention of our own Dr. Lott, of this city, the application of the forceps and the complete emptying of the uterus.

The attack coming on during labor should be hastened by the same mechanical means, for my experience teaches me that delay here is dangerous to the mother and eminently so to the child, and that nine times out of every ten the attack will continue until labor is terminated.

In cases occurring subsequent to delivery, the active medicinal treatment already outlined should be practiced, followed by the eliminatives and tonics which, also, have been fully described.

Before closing I wish to report the following interesting cases which have a practical bearing upon this paper:

Case 1.—On June 10, 1907, I was called to see Mrs. ...., primipara, at full term, who was suddenly seized with convulsions soon after labor began. She had six convulsions in eight hours, at the end of which time she was delivered of a healthy child by the natural efforts.

The last convulsion immediately preceded the termination of the second stage of labor. Her recovery was uneventful and complete. There were long intervals between the convulsions, during which times the patient was rational.

Case 2.—On August 8, 1907, was hurriedly summoned to see Mrs. ...., multipara, who, on the morning of the fourth day after confinement, suddenly complained of being blind, and in a few moments had a convulsion. She had four spasms within the next few hours, only partially regaining consciousness in the intervals, passed into a state of coma, from which she did not rally for several hours, but made a complete though rather tedious recovery.

Case 3.—On reaching Mrs. ...., primipara, to whom I was called on January 13, 1908, I found her in convulsions.

The history elicited was to the effect that the period of gestation was complete, but that there had been no complaint of labor pains. The first thing complained of was an acute pain in the region of the stomach; a few minutes later the patient said she was blind, and immediately was seized with a convulsion.

On examination, there was no dilatation of the os uteri. On close observation I perceived that, notwithstanding my efforts to control the spasms, they were recurring with systematic regularity about every twenty to thirty minutes. Deciding that labor had already begun, and that the convulsions were synchronous with the pains, I took up the task of artificial dilatation and delivery, which I was able to accomplish after the elapse of several hours and the occurrence of as many as twenty convulsions.

After an instrumental delivery of a stillborn baby, there was not another convulsion. The mother was in profound coma in the intervals after the first convulsion, and did not return to consciousness for several hours after delivery. Her recovery was slow and tedious and reached through a period of ninety days. There was some œdema of feet and puffiness of face, indigestion, disturbed vision, headache, and albumin and casts in the urine, in greater or less quantity, throughout this long period of time.

She is now in perfect health. No analysis had been made of the urine in any of these cases prior to delivery, as there had been no subjective symptoms, and therefore prophylactics were not employed.

The *plan* of treatment followed in these cases, with the resultant happy issues, is fully set forth in the body of this paper.

PUERPERAL ECLAMPSIA WITH REPORT OF CASES.

BY JOHN A. FERRELL, M.D., KENANSVILLE, N. C.

Eclampsia is a word coming to us from the Greek language, meaning to shine, or burst forth. Puerperal eclampsia has been defined as "an acute nervous affection," characterized by convulsions, with loss of consciousness, occurring toward the close of pregnancy, during or after labor, believed to be caused by the irritation of the vaso motor centers, by retained excrementitious substances." During the convulsions nearly all the muscles of relation, and in fact those of organic life, are contracted, and the fit is preceded, accompanied and followed by a more or less complete suspension, for a variable time, of the intellectual and sensorial faculties.

In a brief paper of this kind it is not possible to go into a detailed discussion of the various phases of puerperal eclampsia. It may not, though, be impractical to mention under some aspects of the subject a few salient points.

To begin with, we may say its etiology is still obscure. The many theories advanced to account for its cause stand in evidence of this fact. All we can say at present is that in the body metabolism of mother and fœtus certain excrementitious substances are produced which are poisonous to the whole body, unless rendered harmless and thrown off by the excretory organs. The exact nature of these poisons is not yet understood, but it is known that their cumulative action gives rise to the eclamptic seizures. Being stored up in the maternal blood, it is probable they serve as irritants to the arterial walls, causing their sudden contraction. Resulting from this, besides other phenomena, there are especially, cerebral disturbances and renal congestion. Kidney deficiency more than deficiency of other excretory organs is responsible for the eclamptic condition.

Infrequency eclampsia is seen once in about every three

hundred and twenty-five pregnancies. It occurs more frequently in primiparæ than in multiparæ, and in multiple than in single pregnancies. Weak or diseased kidneys predispose to it. As to time it is seen most frequently during pregnancy, next in frequency during labor, and least in frequency during the puerperium.

The mortality is variously stated by different writers. Hirst gives it at fifty per cent if eclampsia occurs during pregnancy or labor.

With regard to the symptoms and diagnosis only a few words need be said. With the history known the condition can hardly be mistaken. Though the attack may come on abruptly without warning, there are usually prodromal symptoms, such as pain in the head and epigastrium, disturbed vision, and scanty urine. Nothing special need be said about the convulsions. It is noticeable, however, that though the patient seems rational the greater part of the time, yet when she recovers she has no recollection whatever of events which occurred during and immediately preceding and following the whole period during which convulsions occurred.

The probable causes of eclampsia being understood, the indications for treatment may be summed up briefly. If possible treat the patient in time to avoid the systemic condition which gives rise to eclampsia. If a convulsion comes on give chloroform to control it. This done, diminish nervous sensibility, to reduce the convulsions in frequency and in violence, by giving hypodermatically fifteen drops of the fluid extract of veratrium viride, and administer per rectum a drachm each of chloral hydrate and potassium bromide in solution.

Hasten next to eliminate the poisons from the blood, by proceeding as follows: Place two drops of croton oil diluted with sweet oil on the back of the tongue. The body should then be enveloped in blankets which have been wrung out in hot water, until there is free diaphoresis. In the meantime the head should be kept cool with an ice cap. Next by hypo-

dermaclisis a pint of normal salt solution should be injected under the integument over the breast; and by gravity several quarts of the solution injected into the bowel. As soon as practical repeated doses of magnesium sulphate should be administered until there is free catharsis. Venesection is practiced with good results by some. Again the use of large doses of morphine, by hypodermic administration, with some physicians, has given good results. Pilocarpine should never be used on account of its depressent action, and its tendency to cause œdema of the lungs.

Having thus briefly mentioned a few features of eclampsia, I shall now report also briefly some cases I have met with in my practice:

Case 1.—Married; age, 22; nearly seven months advanced; much swollen in face and extremities; weight, about 105 pounds. Patient inherited weak kidneys, and when first seen had been swollen about five weeks. When I was called in consultation the patient had for twenty-four hours been having convulsions at intervals of from two to three hours. The treatment used up to this time consisted of chloroform to control the convulsions, quarter-grain doses of morphine injected under the skin, and five-drop doses of tincture of veratrium viride given in the same manner. We discontinued the morphine and pushed the treatment outlined above. The convulsions did not return, and with the eliminative treatment kept up the symptoms improved nicely for two days. On the third day, in spite of the treatment, the symptoms grew worse. The family was then consulted and agreed to an immediate delivery.

With no instruments at hand except obstetrical forceps, and no help besides two negro women, I went to work. By the digital method I soon had the os dilated to the size of a dollar. One blade of the forceps was then introduced a few inches and allowed to remain until labor pains started up, and was then removed. Two hours later the head was engaged in the superior strait. Further advancement practically

ceasing, I applied the forceps, and soon effected the delivery. This was done while the patient was under chloroform anesthesia. She stood the ordeal very well, but suffered some a few hours later from shock. There was no difficulty in delivering the placenta. About twenty-four hours after labor was concluded, notwithstanding chloral, bromides and epsom salts were being pushed, together with the normal saline solution and the hot packs, used as suggested above, there was another convulsion. This was controlled with chloroform. After this the patient improved rapidly. Dietetic, hygienic and medicinal treatment was kept up for two months, when the urine became free of albumin, the digestion became normal, and there was no more headache. The patient was then dismissed, and now, eight months later, is in excellent health. The baby lived only twelve hours.

Case 2.—An unmarried negro; age, 19; weight, 150 pounds; primipara; about seven months pregnant. She was, without warning, seized with a convulsion while at work in the field. After she was carried to the house she had four other fits, before I saw her, at intervals of about three hours. In this instance, for good reasons, I felt justified in terminating pregnancy at once. Treatment was given to control the convulsions, and the woman was delivered in a few hours with much more ease than was experienced in case No. 1. With the exception of a single fit on the eighth day after delivery, which was due, I think, to a neglect of the treatment prescribed, the woman made a rapid and uneventful recovery. The baby, mixed blooded, and not a very welcome visitor, died three days after birth.

Case 3.—This case, I am not sure, can be classed as eclampsia, as the convulsive seizures came on twelve months after confinement. The patient was an unmarried cook, multiparæ; age, 30; weight, 130 pounds. She gave a history of convulsions coming on soon after labor and continuing for ten days. She was attended in confinement by a negro midwife, who assured the patient that the "afterbirth" was de-

livered. The baby died soon after birth. The fits stopped coming on, but her abdomen remained large. This she thought was normal. After twelve months, with the return of the convulsions, I was called in. Careful examination revealed that the uterus was distended and that the cervix was boggy.

A retained placenta was suspected. The woman was put under the influence of chloroform, the cervix dilated one and one-half inches, and by Crede's method a whole placenta was expressed. This was in a putrefactive state, but showed that about one inch of the cord was still intact. Eliminative treatment was adopted, and by the end of the third week the urine, which at first would solidify on heating, was free from albumin. There were no more convulsions, and after a month the woman was back at her work.

PLACENTA PRÆVIA—ITS ETIOLOGY AND TREATMENT.

BY H. B. HIATT, CLINTON, N. C.

The occurrence of placenta prævia is due either to an attachment of the ovum to the endometrium of the lower uterine segment in the vicinity of the internal os, known as primary placenta prævia; or is due to the ovum having become attached, at a point higher up on the uterine wall, growing, in the course of development, downward until it reaches or encroaches upon the internal os, known as secondary placenta prævia.

Normally the placenta grows an equal distance in all directions from the insertion of the umbilical cord. The insertion of the cord represents the point of the first vascular supply to the ovum from the fœtal side. This concentric growth around the cord insertion is due to the fact that the nutritive and developmental conditions of the endometrium are equally favorable in all directions from the primary attachment. The formation of secondary placenta prævia shows that these nutritive and developmental conditions of the endometrium are lacking above and increase below as the internal os is approached. These conditions, whatever they may be, that render the mucosa of the uterine body walls less fertile and the mucosa of the lower uterine segment more fertile, are the agents that play the most important etiological role in the formation of placenta prævia.

The ideal sites for placental attachment are the middle of the anterior and posterior walls of the uterine body. These spots offering the best source of nourishment for the developing ovum, due to the fact that the mucosa is thickest, richest in glandular structure, more energetic and particularly fortunate as to vascular supply; the union of the four great arterial trunks occurring at this point. It is here that the ovum is normally implanted; faulty attachment being due to some

error in the conditions which should bring about the more normal attachment. This error, Stassman thinks, depends, primarily, upon malnutrition of the normally more fertile areas. So for an attachment of the ovum to the lower uterine segment the mucosa of the uterine body must be less adapted to furnishing the nourishment sufficient to carry the ovum to full term or the mucosa of the lower uterine segment, better adapted to furnish the necessary nourishment.

By exhausting and rendering less fertile the normally nutritive soil of the body walls, numerous and rapidly recurring pregnancies predispose to the formation of placenta prævia. The histories of placenta prævia patients show about 90 per cent of them to be multiparæ, and of these an overwhelming majority give a history of endometritis and subinvolution in previous pregnancies. These two conditions stand out more prominently than any others as predisposing causes to abnormal placental attachments. In themselves they can not influence the implantation of the ovum, but by bringing about various vascular and anatomical changes in the endometrium (and more than likely the muscular element also, for it is readily seen that due to the intimate connection of the two with no intervening connective tissue layer to break the continuity of the advancing infection, that it would soon reach the muscularis), these changes would have a direct effect upon the nutritive value of the various regions. By causing changes in this nutritive value they would thus exert their influence upon the location of the placenta.

It is probable that during the earlier stages of development any spot that offers an attachment for the ovum will suffice, and at this stage the conditions just mentioned would hardly matter; but the probability of the gestation continuing to full term diminishes in proportion to the unfavorable condition of the mucosa upon which it is growing. An ovum implanted upon a soil rendered unfavorable by endometritis or any other condition, will as it grows older and needs more nourishment grow in the direction from which its nourishment

is furnished, and thus to the point where the mucosa is richest and most energetic. Endometritis renders the mucosa of the middle of the anterior and posterior walls of the uterus less fertile and more unfavorable in all ways as a placental site. And it is for this reason that it is to be classed as the most frequent and surest cause of the occurrence of placenta prævia.

The pathological picture of endometritis is one of an intense congestion of the uterine mucosa, the adnexia and the vessels supplying these parts, with a subsequent necrosis and sloughing of the mucosa and a great infiltration. "In endometritis as elsewhere the primary result of the inflammation is an increase in size (congestion), while the ultimate effect is cicatricial contraction." (Gilliam.)

The increase in size of the lymphatics and blood vessels and the clots in the opening of the vessels and the great denuded placental site offer very favorable opportunity for the infection to invade the deeper structures, and in this way make the inflammatory processes more severe and the cicatricial contraction still greater. The most susceptible point and the one showing the most active changes is the recent placental site. Here the infection is more severe in form, more active, and the inflammatory changes greater, due to the lessened resistance of this spot and the relatively greater resistance of the rest of the organ. The inflammation is greatest and the necrosis and sloughing greatest where the mucosa is most richly supplied with glands and blood vessels, namely, the middle of the anterior and posterior walls of the uterus. From their anatomical characteristics, and being the usual placental sites, these two points bear the brunt of the process. The regeneration of the mucosa after the necrosis and sloughing subsequent to the infection is slower and more imperfect than the regeneration following other destructive processes—such as menstruation and normal uninfected puerperium. The regenerated mucosa appearing in the place of that lost is not nearly as well provided to take care of the ovum as

the original mucosa. In the regions of the tubal and cervical openings the mucosa does not undergo the great changes and extensive necrosis of endometritis as is experienced by the other regions, because the mucosa in these regions is not so highly developed, so rich in glands or so well supplied vascularly. Because of their lessened changes their regeneration is quicker, better and nearer normal than is the case with the body mucosa.

Now this being the case and the above facts being considered, would it not be reasonable and rational to suppose that these regions having made a complete recovery and carrying an excessive amount of blood to the more severely attacked portions become, because of this greatly increased blood supply, the seat of an over-regeneration and assume more the character of the body mucosa and thus supersede the body mucosa as a more fertile spot for placental attachment. It is known that frequent attachments of the placenta to a given site on the endometrium may ultimately so effect, by vascular and chemical changes, that site as to render it unfit and to render other parts of the mucosa more favorable for the attachment of the placenta, and thus act as a cause of placenta prævia or some other abnormal attachment.

It is also a well-known fact that a long-continued increased blood supply results, in healthy tissues, in a hypertrophy, which is a condition of over-regeneration. Now with this condition of over-regeneration resulting from the hyperæmia may it not be the case, that this fight for life followed by the prolonged fight in regeneration, and the cicatricial contraction, leaves the normal site in an exhausted condition, results in anatomical (vascular) and chemical changes, and so renders it unfit for supplying the ovum with necessary nourishment to allow the pregnancy to reach full term?

It does not follow that this abnormal attachment meets the requirements of the ovum as well as the normal attachment or furnishes as much nourishment to the given amount of space. For this is disproven by the size of the prævia placenta, the size being 100 to 200 sq. cm. larger in the

prævia placenta, this increase being due to spreading to obtain more food. To repeat, it does not follow that the mucosa of the lower uterine segment fulfills as well the conditions necessary to normal growth and development of the ovum as the other parts of the uterine mucosa do in healthy and normal attachments. But the point is this: the mucosa of the lower uterine segment, even in its imperfect condition, furnishes a better ground for nourishing and developing the ovum than the endometrium of the body wall that has been exhausted by its fight for life and rendered anatomically unfit, more or less, by the inflammatory and cicatricial changes incident to the disease.

Treatment.

I will not attempt to discuss in detail the treatment of placenta prævia, but will only call attention to the more important points, considered from three (3) standpoints: (1st) Prophylaxis; (2d) Before labor; (3d) During labor.

The prophylaxis of placenta prævia is mainly dependent upon three things: first, the prevention of endometritis; second, the proper attention during the puerperium to insure complete involution; and third, the prevention, if possible, of rapidly recurring pregnancies. The prevention of endometritis before and during labor is only insured by perfect asepsis. This being next to impossible, we should use every antiseptic precaution at our command.

After labor as a prevention both of endometritis and subinvolution of all debris; any pieces of placenta or shreds of membranes retained should be removed. All lacerations of the genital tract and other lesions incident to parturition should receive the proper attention.

Rest in bed with nourishing but light diet with proper elimination until complete retraction and contraction of the uterus has occurred is most important. The danger of allowing a patient with a soft, boggy uterus to sit up and to resume her domestic affairs too early is readily appreciated. After perfectly normal labor with no infection or abnormal complications the danger of subinvolution with various mal-

positions of the uterus resulting is still to be reckoned with if we do not give the proper attention to the puerperium.

The abnormal positions assumed by the uterus incident to the subinvolutional exert more or less influence upon the vascular supply, causing it to be lessened in some regions and increased in others. This disturbance in the vascular supply will necessarily cause the endometrium to undergo atrophy changes where lessened and hypertrophy were increased, and in this way affect the implantation of the future placenta. The management of labor and the puerperium is a subject which deserves more consideration than could be given here. I merely mention the above points to show the importance of the proper management as a preventive measure of endometritis and subinvolution, and through these of placenta prævia.

The treatment during pregnancy is viewed differently by the different authorities. Some favor immediate delivery, others preferring to temporize and allow the pregnancy to go to full term if possible and then employ the procedures they deem best. But the majority agree that if placenta prævia is positively diagnosed, pregnancy should be interrupted. In those cases of suspected placenta prævia with persistent bleeding, dilatation should be done and the true condition of affairs ascertained; for in these cases premature labor will supervene any way. And again, a case of persistent hemorrhage during pregnancy is usually significant of one of two conditions, viz: Placenta prævia or premature separation of a normally implanted placenta. In either case the contents must be at once removed if your woman is to be saved. In removing the contents dilatation should be begun with a Goodell's or some other like instrument, and completed manually. The most all-around satisfactory method of extraction is internal pedalic version, one foot being brought down, and thus allowing the buttocks to act as a tampon. If hemorrhage ceases after version is performed expulsion may be left to nature, but if oozing continues gentle traction upon the leg should be employed so as to more firmly compress the

placenta with the buttocks. Extraction should not be attempted until the cervix is sufficiently dilated to admit of the passage of the head or cervical tears will result and cause more hemorrhage. In those cases where the cervix is so rigid that manual dilatation can not be employed a tight cervical and vaginal pack of sterile gauze should be used. This will check the hemorrhage and will produce sufficient dilatation after a few hours to permit of the necessary measures for delivery.

At the time of labor the treatment will depend upon the amount of dilatation present and the condition of the patient. If the cervix is sufficiently dilated immediate delivery either with forceps or by version is indicated. If the patient has not been weakened by loss of blood, then with a central variety the leg can be brought down by version and let the dilatation proceed naturally. With a marginal variety and only slight hemorrhage the membranes may be ruptured and the placenta allowed to follow the retracting walls. This will of course prolong labor somewhat, but we have the head to act as a check to hemorrhage by pressure and more possibility of a living child being born than by the rapid dilatation and Braxton Hick's method of delivering. However, should sufficient hemorrhage occur to rapidly weaken the patient, rapid dilatation and immediate delivery is indicated.

Cæsarean section is strongly advocated by some obstetricians, and their reports show very good results. The maternal mortality has been lowered, but as yet there has been but very little if any reduction in the infantile mortality. The Cæsarean operation will do very well for the skilled operator, surrounded on every side with well-trained assistants, perfect appliances for operating and every facility for the care of his patients. But for the man who has to rely more or less on nature to do his nursing, with little or no assistance and very imperfect conditions on every hand, there is little hope of saving the infant and very grave danger of losing the mother.

EXCISION OF THE COCCYX (COCCYGECTOMY).

BY JOHN R. IRWIN, M.D., CHARLOTTE, N. C.

Coccygodynia is the indication for this operation. This affection is characterized by severe pain in the coccygeal plexus and the vicinity of the coccyx. This pain, which occurs almost exclusively in women, is increased by the slightest movement of the bone, particularly from contraction of the gluteus maximus, the coccygeus, the ischio-coccygeus, the levator ani and the sphincter ani muscles. It is often obstinate and is due to various causes, such as fracture and dislocation of the coccygeal vertebra, from a fall, kick, forceps delivery, etc., or inflammatory processes in the bone, its joints or vicinity. The pain is usually due to inflammation as well as pressure upon the fifth sacral and coccygeal nerves. In many cases no special cause can be found, and we have to deal merely with neuralgia.

Three-fourths of the cases are due to injuries in labor. There is frequently temporary pain (coccygodynia) in the coccygeal joint following labor, due to strain of the anterior ligaments of the bone, but disappearing some weeks after.

Men are almost immune because they do not bear children, and because the bone is better protected in them than in women from external violence by the higher situation and the closer approximation of the tuberosities of the ischia, and because there are not the same development and mobility of the muscles of the pelvic floor and gluteal region.

The second coccygeal joint is more often affected than the first. The patient complains usually of pain "in the very end of the bone." With every step, every effort to sit down or rise, with every movement of the sphincter ani, the bone is pulled upon and moved.

Coccygodynia must be distinguished from vaginismus, hemorrhoids and anal fissure by physical examination.

Dr. J. C. Nott, of Mobile, Ala., described an operation in the *New Orleans Medical and Surgical Journal,* May, 1844, by which the last two coccygeal bones were removed for what he called "neuralgia of the coccyx." Fifteen years later, in 1859, Sir James Y. Simpson described a disease of the coccyx, which he said could nowhere be found mentioned in books, and for which he proposed the name "coccyqodynia." He advocated as treatment subcutaneous section of all the tendinous and muscular attachments of the coccyx. Good results have been obtained by subcutaneous division of the muscles and ligaments that are attached to the coccyx, particularly the gluteus maximus and sphincter ani. Knowing that the surest method of bringing about a permanent cure consists in excision of the bone, this method was adopted in the following case:

Miss B., age nineteen, February 12, 1906, fell astride the sharp edge of a step, the coccyx receiving the force of the fall. Since that time she has been practically an invalid, unable to sit up or walk without pain in and about the bone, and consequently has spent the greater part of the time since the receipt of the injury (over two years) in bed. Thus her college course was intercepted, and she was incapacitated for work. Her family history is good and she had never been sick or confined to bed.

Learning that general and local treatment had been faithfully tried without benefit, and finding by physical examination an extremely tender and painful condition of the parts, which had existed all these months, I decided that excision of the coccyx was indicated and imperative.

After thorough general and local preparation the patient was anesthetized and placed in an exaggerated left lateroprone position. An incision was made from the tip of the coccyx upward, and the entire length of the bone exposed. The tip was freed by severing its attachments with the scalpel. It was then grasped by bone-holding forceps and pulled outward, and the lateral structures which were thus put upon

the stretch were divided up to the sacro-coccygeal articulation, which was then divided with the scalpel. It is always best to disarticulate the joint and not to cut away the coccyx with bone forceps, as the end of the sacrum may be injured and necrosis result. The only artery of importance that required a ligature was the median sacral. The wound was closed with silk-worm gut sutures, the introduction of which was greatly facilitated by having an assistant place his index finger into the rectum and push up the bottom of the wound, which is always very deep and difficult to close unless it is made shallow in this way. A compress of gauze was placed over the incision and held securely in place by a T bandage. The first four days the bladder was emptied every eight hours with a catheter in order to keep the wound clean and prevent infection. For the same reason the bowels were not allowed to move until the fourth day. The wound was washed daily with a solution of corrosive sublimate 1-1000 and a clean compress and T bandage applied. Only one hypodermic of morphia (one-eighth grain) was given a few hours after the operation for restlessness and pain.

In ten days the patient was walking around in the hospital, and three weeks later left for her home, a well and exceedingly grateful patient. The result of the operation is most gratifying in the symptomatic relief afforded. Have heard from her twice since leaving, and she says that she hasn't felt the pain at all since the operation.

This operation is tedious and more difficult than might be supposed. The dangers attending it are infection, wounding the posterior plexus of veins or rectum. There are three methods of treating the wound: closure, as in the case reported; drainage with strands of silk-worm gut, and the open method. In my opinion the drainage method is preferable. The open method is not a good one, as the healing process is exceedingly slow and troublesome, owing to the great depth of the wound and the frequent occurrence of infection taking place from the rectum.

My reason for presenting this subject and case to the Society is, it is rather rare and seldom if ever discussed; to call your attention to the three methods of operating; to the complete relief following the operation; and to call your attention to the fact that the disease was first discussed and the operation for its relief was first suggested by Dr. Nott, a Southern physician and surgeon; and to help encourage the presentation of short and practical papers to the Society.

HYSTERECTOMY, WITH REPORT OF A CASE.

BY R. O. DEES, M.D., GREENSBORO, N. C.

The subject of hysterectomy is one of significant importance and one with which the surgeon will have to meet from time to time.

The question will often present itself, shall we remove the uterus at the time of removal of both tubes and ovaries, and if we fail to remove the uterus do we fail to remove all foci of infection?

There are, of course, in this procedure many arguments pro and con to be presented, but in many a radical operation it is the only conservative course to pursue.

During the last decade we have learned more of the gross and microscopical pathology and physiology of the pelvic organs, and since the introduction into surgery of aseptic measures, hemostatic forceps, aseptic ligatures, absorbable and nonabsorbable suture material and the seamless rubber glove, etc., we are enabled to enter this field of surgery and alleviate pain and suffering of patients at a comparative minimum risk and danger to them. We are frequently confronted with the question in cases requiring a salpingo-oophorectomy whether or not to do a hysterectomy. When we consider the fact that the greater percentage of operations upon the tubes and ovaries are for pyo-salpynx, and before this condition occurs that the infection has traveled through the uterine cavity first and caused an endometritis, and in a large number an existing metritis, then are we justified in leaving behind this diseased organ and only give our patient a temporary relief by doing the salpingo-oophorectomy, as an operation of this kind will, in all probability, give only a temporary relief.

The internal organs of generation, viz, uterus, tubes and ovaries, possess a joint function, and any one of them is dependent upon the other. The uterus, deprived of its adnexa, becomes a useless and nonfunctioning organ, and in any con-

dition requiring a salpingo-oophorectomy and there is a question of doubt in the mind of the operator as to the healthy state of the uterus, is it not a justice we owe our patient and conservative surgery to remove the organ? The tendency is towards conservative surgery, but not beyond a point to fail to alleviate a pathological condition. This same conservatism has been used in supposed innocent fibro-myomata in the expectation that at the time of menopause the patient would be restored to health and happiness, and instead to find that she is a greater invalid and a possibility of the fibro-myomata becoming necrotic or septic, and places her life in the gravest peril, and after all may die in spite of surgical intervention. There are a few well-selected cases in married women, or those contemplating marriage, where a myomectomy or an enucleation of a subperitoneal fibro-myomata would be a justifiable procedure, but, indeed, these cases are few and far apart. In this connection it has been stated by Bland Sutton that during this procreative period of a woman's life she is twenty times more likely to grow more fibroids than to conceive successfully. A complete removal of the uterus is not at all necessary in the class of cases referred to, but the less radical operation of supravaginal hysterectomy being quite sufficient. By an amputation of the uterus at the internal os the support of the pelvic floor is not diminished. The vesico-uterine attachment is undisturbed, and there is no tendency to prolapse of either the bladder or rectum unless there has been some previous existing weakness of the pelvic floor. In a great many of these cases we will find a displaced and often an enlarged uterus, a condition which can only be successfully relieved by high amputation of the organ. Frequently the pelvic inflammation has reached such a point and adhesions so numerous, and everything so matted together, that the less radical hysterectomy is the only course left to us to pursue.

Influence on Menstruation.

An artificial menopause is inevitable after the removal of the ovaries. We know that ovulation and menstruation are

associated and more or less dependent upon each other. However an individual may menstruate a few months after a salpingo-oophorectomy, this temporary menstruation being the result of habit or what not while the individual adapts herself to the changes made as the result of the operation. Experiments upon dogs show that after the removal of the ovaries of a pregnant dog she will abort, and to remove the ovaries of a second pregnant dog, at the same period of advancement, and inject from time to time an emulsion made from the ovaries of a dog that she will go on to full term. This experiment demonstrates the fact of an internal secretion of the ovary which plays an important role in the physical economy. This experiment and other like experiments demonstrates the fact that it is useless to leave behind probably an enlarged uterus and one having a malposition, or possibly a small tumor, or one having an inflammation of its mucous or muscular coats, and many other pathological conditions too numerous to mention, in the expectation that at the time of menopause these conditions will correct themselves and clear up; and, on the contrary, find that all the symptoms are exaggerated and the patient is a greater sufferer and invalid than prior to the time of the climacteric.

Mortality.

The mortality rate is no higher in an hystero-salpingo-oophorectomy than in the less radical operation as a simple oophorectomy, unless the patient is already shocked; then to prolong the operation by removal of the uterus, as such operation would necessitate some time, might result in a fatal termination by producing more shock; but when shock is not an existing complication a removal of the uterus and its appendages by supravaginal amputation will remove all foci of infection, and we expect, and will in all probability get, a perfect result. The case which we now report is one bearing along the same lines as we have tried to outline.

Case.—E. B., age thirty; housewife.

When called to see patient January 26, 1908, found her complaining of a lump in abdomen. Pulse was rapid and

wiry. Some elevation of temperature, and the entire abdominal region hyperesthetic. Palpation revealed a tumor extending to the umbilicus. A superficial examination only was made on account of the pain produced thereby, but the condition was plainly one of a true surgical nature and operation was advised, to which patient promptly consented, and was admitted to St. Leo's Hospital January 26, 1908. She was prepared for operation over night in the usual routine manner. Two hours before operation, however, she was given hypodermically morphia, grains one-fourth; scopolamin, grains 150. This repeated one-half an hour before operation was begun, complete anesthesia being completed with ether. On palpation this large fibro-myoma was easily made out extending to the umbilicus, and numerous smaller fibro-myomæ were also easily palpable. On vaginal examination the pelvis showed marked inflammatory thickening and a mass on either side, more marked on the right side. On abdominal section some sero-sanguinous fluid was noticed. The pelvis was one mass of adhesions, extending from tumor and uterus to intestines and bladder and to the pelvic walls. Examination of the tubes and ovaries showed the former to be very much infiltrated and presenting the appearance of pus formation, and the latter to be very much congested and very much cystic. These organs were diseased to such extent and so involved in adhesions that the leaving behind of any part of them would have been the leaving behind of that great focus of infection to give trouble in the future, and the only conservative course to pursue was to remove them en masse. This was done by a supravaginal hysterectomy. On examination of the appendix it was found to be about twenty cm. in length and very much congested and tied down to the cæcum by bands of adhesion. The distal end was bulbous and presented the appearance of having undergone numerous catarrhal inflammatory attacks. This, of course, was removed. The patient by this time was greatly shocked, due to the extent and time of the operation. She was infused with normal salt solution, to which a small

quantity of adrenalin chloride had been added, surrounded with hot water bottles and given stimulants of strychnine and whiskey, to which she promptly reacted. Nausea was a distressing symptom and lasted five or six hours, after which time it cleared up and patient went on to an uninterrupted and uneventful recovery, and has continued well to date and is able to attend to her household duties.

Examination of the Specimen.

A section of the specimen after removal showed that there was a rather extensive calcareous degeneration.

The above case as reported in detail does not show any special features, but we have tried to make plain that in some of these cases that attempts at trying to be conservative and leaving behind dissected portions of an ovary, or what not, proves fruitless and sometimes fatal. If not the latter, our patient will continue to be an invalid and can not see where she has been benefited by an operation, and when they will not consent to a second operation to let us complete our job we can not blame them. Therefore, if there is a question of doubt in the mind of the operator as to the healthy condition of a tube or ovary, or whether or not a small fibromyoma will not at some time become septic or necrotic, the conservative course, naturally, would seem to be to remove the diseased ovary, tube or uterus, or all, as the case requires, and we will be doing justice to ourselves and patient, and may in the greater number of cases expect a quick recovery and a permanent result.

Urinalysis.

Chemical. Dark amber color; heavy whitish sediment; reaction neutral; odor characteristic; sugar negative; albumin in quantities; specific gravity 1040.

Microscopical Examination.

Pus in abundance; some few red corpuscles; a few hyaline and granular casts; debris in quantities.

The above analysis was made from a catheterized specimen. Unfortunately a quantitative albumin test was not made.

DIAGNOSIS AND TREATMENT OF ECTOPIC GESTATION FROM THE STANDPOINT OF A COUNTRY PHYSICIAN, WITH REPORT OF CASE.

BY G. F. DUNCAN, M.D., HIGH POINT, N. C.

Physicians recognized and treated, in a crude manner, extra-uterine pregnancy many years ago. With the kind assistance of nature ordinary treatment cured some of these cases.

In studying this subject it at once becomes apparent that a great burden of responsibility is thrust upon any physician who must meet and grapple with this anomaly of pregnancy, and more especially the country physician who, at best, treats his surgical cases at a great disadvantage.

In a little more than twenty-five years surgery has blazed the way to success in the treatment of these multiplex cases, so that to-day we are expected to do our duty. Keeping in view the object as set forth in the text, I shall for purpose of diagnosis consider briefly, first, tubal pregnancy before rupture or abortion of the fœtus.

Diagnosis in this form is difficult. In many cases physicians are not consulted. If rupture does not occur early the unmistakable symptoms may be readily observed. A careful and painstaking history of the case is peculiarly important. Patients with a history of salpingitis, neoplasms and adhesions in pelvis, who have not borne children for years, are more prone to this accident. Patient generally gives a history of suspected pregnancy but feels "different." A synopsis of the diagnostic symptoms are given as follows: History of cessation of menstruation with recurrence in an irregular, slight, or may be profuse manner from ten days to a month or more after missing, the blood differing in quantity and color; in other words, an atypical menstruation. Unusual pains, rather severe and of a colicy nature, localized to one side, in the lower abdomen. Some of the objective and sub-

jective signs of pregnancy are present. Physical examination reveals a distended tube, or tender mass, with uterus to opposite side.

By comparison we find that all these symptoms are not present in any associated trouble. The history will exclude salpingitis, tumors, appendicitis and intra-uterine, gestation. The physician should educate himself in the art of making an accurate bimanual examination and should use the greatest care, as rupture may be induced. Abortion and threatened abortion has been mistaken for this form, and curetting has been done many times under this delusion.

Irregular symptoms of abortion should cause suspicion of ectopic pregnancy, and no case should be treated as an abortion until after a careful bimanual examination has been made. Expulsion of decidua is not a practical means of diagnosis.

In the three varieties of tubal pregnancy, ampullar, isthmic and interstitial, rupture may occur into the abdominal cavity or the folds of the broad ligament. In the interstitial form the ovum may be forced to pass into the uterus and continue as a normal pregnancy. I have had two such cases, which was proven by subsequent history, in my practice of ten years. The fact that nature sometimes takes care of the interstitial variety should not cause us to be less aggressive in our general management. No attempt to differentiate tubal rupture and abortion will be made in this paper, as the symptoms and treatment are largely the same.

At the time of rupture or, as some one has said, in the "tragic stage," the diagnosis is not so difficult. Added to the foregoing symptoms, before rupture, are classical and I might say positive signs. Any woman who has a history of regular menstruation, missing four to twelve weeks, with all or part of the objective and subjective signs of pregnancy, who is suddenly seized with intense pains in either iliac region, which is acute, tearing, excruciating; becoming faint, dizzy, nauseated and pale (acute anæmia) from the severe shock of

internal hemorrhage, which is out of all proportion in comparison; tender and sensitive over lower part of abdomen, generally unable to sit up, and when upon examination a boggy mass is found at one side and posterior to the uterus, and a slight bloody, shreddy discharge occurs, you have a group of symptoms found in no other trouble.

In this condition pulse may be from 120 to 180, and a temperature subnormal. A careful history will differentiate intra-uterine pregnancy, retroverted gravid uterus, pelvic abscess and abortion. In my experience practically all cases of ectopic gestation have occurred in women who have history of salpingitis, or catarrhal trouble of tubes or adjacent viscera, and as this is responsible largely for sterility, hence history of several years sterility prior to this trouble.

Intra-uterine and extra-uterine pregnancy may occur at or near the same time. If patient survives shock of rupture or abortion further symptoms depend on condition of fœtus, as to whether it is living or dead. The first hemorrhage or rupture as a rule is responsible for death of fœtus. In rare cases, however, the fœtus may continue to develop in the peritoneal cavity, provided its membranes are not torn and the placenta is intact. In cases seen after death of fœtus the history will enable us to make diagnosis. Some cases of sepsis and inflammation following a supposed abortion may be due to an ectopic.

After formation of hematocele absorption or suppuration may occur. Should the fœtus survive gestation may continue forming abdominal pregnancy, with symptoms and signs much like the normal form; menstruation is usually present. Movements of fœtus and fœtal heart sounds are easily recognized, as the gestation sack is near the surface. Loss of symmetry in shape of abdomen is characteristic. The uterus is enlarged to five or six inches in length. The further diagnosis and treatment of advanced extra-uterine gestation will be considered in report of case.

That ovarian pregnancy does occur as a primary condition

is now admitted, but does not merit a separate discussion here.

Treatment.—Here our duty is clear. Operate under any and all circumstances. All children die, and 75 per cent of the mothers, if neglected. The mortality after operation is low. The life of the child should not be considered, our obligation being to the mother. If operation should reveal fact of error in diagnosis the associated trouble usually requires the abdominal section.

The operation in cases before rupture or abortion is simple. Technic is the usual one for removal of suppurating tube. Great care should be used lest the impregnated tube should be ruptured. The ovary should not be removed unless diseased.

At time of rupture operate without delay. Do not wait for reaction from shock. Stimulate by injecting one-half liter of normal salt solution into cellular tissue under the breast.

Complete in detail preparations for operation, in order that it may be done more rapidly. Avoid rough manipulation in sterilizing abdomen. Use smallest possible amount of anesthetic. Make long incision, twelve to sixteen cm., in order to avoid delay.

Dr. Kelly enumerates the general principles of the radical operation as follows: Separation of adhesions enveloping sack, removal of blood, fœtus, membranes, placenta and sack. Checking of all hemorrhage. If hemorrhage is active control the uterine and ovarian arteries by clamp. Apply necessary ligatures to control hemorrhage. The entire tube is easily removed by salpingoctomy. If ovary is diseased or adherent it should be removed. Complete toilet of peritoneum and close the abdomen by the quickest safe method. In the country I believe it safest to use gauze drainage in every case.

The operation differs widely, according to complications found. Personally I do not favor the vaginal operation. The after-treatment is the same as in other grave laparotomies.

Absolute quiet should be enjoined, stimulants given, heat applied and a normal salt solution used every four hours as needed.

In cases seen subsequent to rupture or abortion the surgeon can determine best time to operate. It is not safe to wait for nature to relieve the patient.

A case illustrating the difficulties experienced in diagnosis and treatment of ectopic gestation in the country is that of M. J., operated on by the writer at Sparta, N. C., on May 26, 1908.

Patient was a negress, thirty-two years old; four children; youngest four years old. With the exception of some tenderness in region of ovaries and painful menstruation previous history was good.

Patient missed on April, 1907, menstruating profusely during latter half of May, experiencing some pain like slight colic in umbilical and epigastric regions and extending upward.

A physician was called, but no diagnosis made. Patient remained in bed two weeks, and was weak for some time; gradually regaining her strength, enabling her to do light housework.

Two months later, or some time after the middle of July, she menstruated again and thereafter regularly to date of operation.

An enlargement of the abdomen was discovered some time in September, which gradually increased in size until about January, after which it remained about the same, perhaps decreasing some in size, until May, 1908.

She vomited occasionally during the summer and fall, and thought herself to be pregnant, but felt very different to her previous pregnancies; complained of much pain and discomfort during August and September in stomach; finally taking her bed about the first of November.

During first of January she was taken with violent pains, located as before mentioned, which lasted over a week. A

doctor was called in and digital examination was made. Patient was told that she was pregnant but could not be delivered until labor pains became stronger. She remained in bed more or less constantly till May; was examined by two other physicians who pronounced her pregnant, but did not report anything unusual. No movements of fœtus were experienced except, perhaps, slight during the agonizing pains. Patient was seen in consultation May 23, 1908. She was very much emaciated, anæmic, nervous and prostrated.

Inspection revealed a distended abdomen. By palpation I found a large tumor mass, which was moderately tender. In left hypochondriac region, under margin of ribs, could be detected an object like a child's head. The resisting mass extended transversely across abdomen to right hypochondriac and lumbar regions. In umbilical region the mass felt firm and hard. There was a very perceptible sulcus between the umbilicus and pubes, showing that the object was high in the abdomen.

Internal examination revealed a normal uterus, the cervix being unchanged. Bimanual examination determined the fact that the tumor mass was entirely separate from and some distance above the womb. A sound was introduced the usual distance into the uterus, the findings being normal. Diagnosis of abdominal pregnancy with a dead fœtus was made and immediate operation was advised.

The physicians present, Drs. Doughton, Choate and Smith concurred in the diagnosis.

Before discussing the operation I want to call attention to the fact that my instruments were in High Point and it was twenty-five miles to the nearest railroad point, in a part of the country where abdominal sections have not been done, patients usually going away to a hospital.

In taking inventory of instruments which could be collected I found that I had five small hemostatic forceps, one grooved director, one small pair of curved scissors, one pair of bullet forceps, knife, needles, needle-holder, silk and cat-

gut. The abscence of some needed instruments was very conspicuous, specially abdominal retractors; however this trouble was easily overcome as I found at a general store two twelve-inch spoons, selling price five cents. The handles of these were bent down in the proper curve, making two splendid abdominal retractors, which were added to our equipment.

No gauze could be found. I purchased some cheap domestic and prepared my sponges and abdominal pads and dressings from that.

The dining room of a residence was used for operating room. We had no sterilizer, but substituted pots, pans and boilers, which we kept busy for nearly half a day, sterilizing sponges, dressings and instruments, which were wrapped in towels, and were not removed until operation was begun; sponges, pads and dressings of course being wet. Patient was prepared in the usual way. Plenty of reliable sterile water was on hand. One of Abbott's hyoscine, morphine and cactin tablets was given, and a small amount of chloroform used. The incision, after being extended, was about seven inches in length, exposing a sack which was intimately adhered to all surrounding structures. My fingers separated the adhesions from the abdominal walls, which was done with very little trouble.

The child was found to be in a transverse position, with its back to the abdominal wall, the head located as before described. I was soon enabled by the use of fingers and handle of knife to separate adhered intestines from the child's legs, which were brought up through the wound and held by an assistant, while further adhesions of abdominal viscera were separated and child was delivered.

No bleeding points were ligated; patient losing only a small amount of blood.

A very large placenta was found above the womb, which was adhered by strong adhesive bands to the bowels, about the left ovary, and to the womb through its ligaments; it

was soon separated and removed. Some ligatures were applied in separating the adhesions.

The left ovary was atrophied and left tube inflamed, but there was no evidence of rupture about the tube; both ovary and tube were removed. Right tube was also removed, it being diseased. A cyst was found and punctured in right ovary.

Abdomen was flushed out with sterile normal salt solution and closed in the usual manner, with drainage; my special brand of gauze being used.

The placenta was firm, apparently of a fibrous development. The child weighed eight pounds, and had a mummified appearance. According to indications it had gone to full term and had probably died in January, at the time the patient had the severe attack of pain, which was a spurious labor.

This would complete the history and make April, 1907, the beginning of pregnancy.

Patient was under the anesthetic something over an hour, and rallied without any great amount of shock.

Subsequent History.—Patient made an uneventful recovery; temperature being normal the whole time.

The important points gleaned are as follows: Patient never complained of pain in pelvis or low down in side, the pain being at all times in umbilical and epigastric regions, extending upward.

There were no adhesions to either tube and no evidence of rupture in either tube.

The ovary was connected by slight bands of adhesions, the case probably having been primarily an ovarian pregnancy, which condition is considered rare.

No history of typical pain and shock of rupture was given. The omentum was absent. The position of the child was very high.

Four doctors had made an examination during the course of the trouble without any expressed suspicion of ectopic gestation.

Although greatly handicapped in doing the operation, the patient made a good recovery, without the slightest evidence of infection, showing that aseptic surgery can be done under crude circumstances.

I do not believe that a country doctor should hesitate to operate on any and all of these cases on account of location, small equipment or fear of sepsis, provided that proper care is given in making preparation. I would emphasize the fact that cases of ectopic gestation are abundant and doctors should form a habit of thinking of their possibility, which will cause many more diagnoses to occur, and incidentally many more lives to be saved.

The operation in advanced extra-uterine pregnancy, where the child is alive, is more difficult on account of danger incident to hemorrhage.

The best plan after removing the fœtus is to tie the cord as short as possible, leaving the placenta to be discharged piecemeal at a later date. Gauze drain should be packed over its site.

In conclusion I want to say that my spoon retractors are prized very highly and are carefully preserved in my instrument cabinet.

MATERNAL NURSING.

BY W. W. McKENZIE, M.D., SALISBURY, N. C.

Moralists and obstetricians agree in urging the importance of the mother nursing her infant. As a rule she thus best secures her own and its health; she obeys nature's law and designs; promotes the closest mutual attachment, and has an important influence in fashioning the first mental and moral development of her offspring.

The prevalence of wet nursing has been said to be the proof of a people's decline. Many writers on this subject state that the ability of the mother, particularly among the well-to-do, to fulfill this most important function is surely decreasing. This may have been a true statement a decade ago; at the present time, however, I am sure it is erroneous. In my own medical practice I have seen a change for the better, particularly during the past six years. The young mother of to-day is better able to nurse her offspring than was her sister five or ten years ago. I attribute this to the fact that the youth of the present day are more vigorous, more nearly normal individuals than were those of a decade ago. The change which enables more mothers successfully to nurse their infants is due to two causes: more vigorous fathers and mothers and more vigorous offspring. Following this line of reasoning the more normal the mother the better able is she to perform this normal function. That this is true is due to the fact that growing girls and young women are leading more hygienic lives than formerly. The making of golf, bicycle and horseback riding, automobiling and boating popular and fashionable; in short, the taking of girls and young women out of doors and keeping them there a considerable portion of the day has worked a marvelous change for the better, both physically and mentally.

A neurotic mother makes the poorest possible milk-producer. Proportionate to the population there are fewer

neurasthenics among young women to-day than there were ten years ago, and I think there will be still fewer ten years hence. It is a fortunate thing for the future of the human race that the young woman has transferred her allegiance from the crochet and embroidery needle to the golf club and the like. It may be said that our argument holds only with the wealthy or the well-to-do.

Imitation is one of the strongest characteristics of the human race, and this tendency in America to outdoor hygienic living pervades all classes.

Food is better prepared and better selected, owing to increased knowledge on the part of the people as to what constitutes proper nutrition. The food and care of the growing girl have most intimate bearing upon her future life, and if she is to be called upon to perform the most important function of womanhood, she surely has the right to demand that she receive during her girlhood proper preparation, which heretofore has too often been denied her.

Parents, no matter what their stations in life, are glad to do what is for the best interests of their children when it is made clear to them. It is our duty to take parents into our confidence and explain to them the reasons for the line of action advised. When they are taught the reason for such procedure they are far more apt to follow them.

One of the chief requirements of a nursing woman being that she shall be mentally normal.

There are few conditions in which we are called to act so variable and so uncertain as in the production of breast milk. The most successful nursing age is between the twentieth and thirty-fifth year. I have, however, seen it successfully carried on in a girl of fourteen years. Some mothers will be able to carry on the nursing for only two months; others three, five, seven and nine months. It is extremely rare for the breast milk to be sufficient for a child after the ninth month.

The following can be laid down as nursing axioms: A diet

similar to what the mothers were accustomed to before the advent of motherhood should be taken. There should be from three to four hours spent daily in the open air, with exercise which does not fatigue. One bowel evacuation daily. There should be at least eight hours sleep out of every twenty-four.

There should be absolute regularity in nursing. There should be no worry and no excitement The mother should be temperate in all things.

Signs of Successful Nursing.—The child shows a gain of not less than four ounces weekly. This is regarded as the minimum weekly gain which may safely be allowed. Where a nursing baby remains stationary in weight or makes a gain of but two or three ounces a week it means that something is wrong; and it will usually, but not invariably, be found in the milk supply. When a baby is nursed at proper intervals and the supply of milk is ample and of good quality, it is satisfied at the completion of the nursing. If it is under three months of age he falls asleep after ten or twenty minutes at the breast. When the nursing period again approaches he becomes restless and unhappy, crying lustily if the nursing is delayed. When the breast is offered he takes it greedily. The stools are yellow and number from two to three daily. The weekly gain in weight under such conditions is usually from six to eight ounces.

Sign of Unsuccessful Nursing.—When supply of milk is scanty the child remains long at the breast and cries when he is removed. He shows signs of hunger before nursing hour arrives.

A cause of failure in breast feeding and probably a most frequent cause is a scanty milk supply. The chief nutritional elements in mothers' milk are fat, 3 to 4 per cent; sugar, 7 per cent; proteids, 1 to 1.5 per cent. Failures may be due to a marked disproportion of these elements which may cause sufficient indigestion and resulting loss in weight to necessitate a discontinuance of nursing. Then there may be a high fat from 5 to 6 per cent, or very low fat, from

1 to 1.5. In the high fat cases there will usually be diarrhœa with green, watery stools. Child strains a great deal and there are green stains on many of the napkins, also regurgitation or vomiting of some material. The fat globerler may be readily made out if the vomited material is placed under a low-power microscope.

Low fat means deficient nutrition and may cause constipation. Sugar is rarely a cause of trouble in nursing a baby. It seldom varies, ranging from 5 to 7 per cent in the great majority of breast milk.

Young children, further, have a marked toleration for it. The proteids of mothers' milk is the most frequent cause of nursing difficulty. Like the fat, it may be so decreased that nutritional disorders may be induced in the patient, or it may be very much increased, the latter being usually the cause of colic or constipation in otherwise healthy nursing infants. In such infants curds may be found in the stools, the passage of which is always accompanied by a great deal of gas. The milk may contain the normal percentage of fat, sugar and proteids, but be scanty in amount. Instead of the four or five ounces to which the child is entitled, he may get but one or two ounces. Whether or not the quantity is sufficient can be determined by weighing the baby before and after each nursing for twenty-four hours. One ounce of breast milk weighs practically one ounce avoirdupois. The quality or strength is determined by an examination of the milk itself. Before nursing the child is put on the scales without undressing, and the weight noted. He is allowed to nurse fifteen minutes. He is then removed from the breast and weighed. A child under one week old should gain 1 to 1 1-2 ounces. At three weeks of age, 1 1-2 to 2 ounces; four to eight weeks, 2 to 3 ounces; eight to sixteen weeks, 3 to 4 ounces; sixteen to twenty-four weeks, 4 to 6 ounces; six to nine months of age, 6 to 8 ounces, and nine to twelve months, 8 to 9 ounces. Stationary weight or loss in weight with a dissatisfied child usually means defect in quantity, which is

readily proved by the weighing. To be fed at the breast may also cause the child to suffer from an excess of good milk, in which event there will be vomiting or regurgitations, usually associated with colic. When this overfeeding continues dilatation of the stomach develops, vomiting becomes habitual, the child loses in weight, and the breast milk is said not to agree, and often, unfortunately, the baby is weaned. This has been the outcome in scores of cases. When there is habitual vomiting and colic in nursing baby two things are to be done: the baby must be weighed before and after nursing and the milk must be examined.

When it is found that the breast milk is too strong or too weak, or when the normal ratio of fat, sugar and proteid are not maintained, it may be possible to increase either the fat or proteids when desirable. The heavy milk will usually be found in mothers who are robust, who eat heartily and who take but little exercise. In such a mother the persisting of a plain diet, allowing red meat but once a day, discontinuing the malt liquor or wine, and directing that she walk a mile or two a day, will frequently bring the milk to digestible proportion. However in some cases they will not be successful, and the colic, constipation and vomiting continues, even though the quantity obtained at each nursing is within normal limits.

In some mothers it will be impossible to change the mode of living except, perhaps, to the discontinuance of alcohol. When such conditions prevail the mother's milk may be modified by giving from one-half to one ounce of boiled water or plain barley water before each nursing. One teaspoonful of lime water added to one ounce of water before nursing has made the breast milk agree when otherwise it would have been impossible.

When the milk is deficient both in fat and proteids a diet composed largely of red meat, poultry, fish, rye bread, or whole wheat bread, oat meal, corn meal, with two or three pints of milk daily, will often be followed by an increase of

both fat and proteids. The use of alcohol in moderate amounts, in the form of malt liquor or wine, will usually increase the fat. Disappointments in improving the quantity or quality of breast milk, however, are frequent. Very few if any mothers are able to successfully nurse their infants after the twelfth month.

Maternal condition under which nursing is forbidden.— When the mother has tuberculosis in any of its various forms or manifestations, whether it involves the glands, the joints, or the lungs, breast feeding is to be forbidden. In epilepsy and syphilis nursing is forbidden. In nephritis and malignant diseases of any nature, and in chorea nursing should be discontinued.

Women who are rapidly losing weight should not be allowed to continue nursing their infants. In case of serious illness of any nature, such as typhoid fever, pneumonia or diphtheria, and upon the advent of pregnancy, nursing should be stopped.

AN ARTIFICIAL FOOD SUITABLE FOR YOUNG INFANTS.

BY CHARLES ROBERSON, M.D., GREENSBORO, N. C.

I am convinced that most papers on infant feeding, if they deal at all with percentage feedings, are made too technical for practical application at the bedside. The formulæ are so complicated that the busy practitioner has no time to study them out, nor has the average mother the ability to apply them. In what I shall say to-day I hope to omit everything that will not be perfectly simple. The greatest trouble with any formula for the modification of milk is the difficulty of having it properly applied in the homes. The problem of feeding young infants and older infants with impaired digestive power continues to be one of the most difficult we are called upon to solve.

Perhaps the main reason for this difficulty lies in the fact that the proteid of cows' milk differs in so many respects from that found in human milk. Not only is the proteid percentage a great deal higher but it differs in its curding property, in its chemical constituents and in its solubility. Notwithstanding the enormous amount of study and experimenting that has been done no one has found a perfect substitute for mothers' milk. There is a constant advance being made, however, and each step taken brings us nearer the goal.

The first step forward was taken when the pediatrist began combining cream, milk and water in such proportions as would make the percentages of fat, sugar and proteid conform mathematically to those found in mothers' milk. These combinations seemed to meet the indications in a great many cases, but the similarity was not perfect. The resultant formula was not such as would produce a food of sufficient nutritive value to cause a normal child to grow and develop in a normal way. There were not enough heat calories in the mixture; then, too, the most serious difficulty was not re-

moved. Many babies could not digest the proteid in the mixture; this trouble was mitigated somewhat by rendering the milk alkaline with lime water or citrate of soda. The chief proteid of cow's milk, caseino gen or calcium-casein, forms about 2.66 per cent of the total proteids; the balance, .84 per cent, being soluble proteids. This calcium-casein combines with the hydrochloric acid of the stomach to form calcium hydrochloride, setting from the base free casein. This casein combines with more of the acid to form the curd of milk as we see it. If sufficient alkali be given the base free casein forms with it a soluble compound, which does not curd with the acid, nor is it acted upon by rennin ferments. But the alkaline milk solution passes on into the intestines to be digested there by the intestinal juices. The secret in this procedure lies in the fact that, being soluble, the milk passes into the intestines much more rapidly than if it is allowed to form a curd in the stomach and the stomach allowed to do its part in the digestive process. This explains the action of lime water and why a child can digest a larger percentage of proteid when the milk is rendered alkaline by its use.

While this second step was a distinct advantage in certain cases, it is a departure from nature and prevents the stomach from doing its share of the work of digestion. Dr. Chapin, of New York, has proven that one object of the curding of milk is to develop the power of digestion in the infant stomach. Hence we do not wish to allow all the proteid to pass undigested out of the stomach into the intestines. Recognizing the difference in the curding property of cows' and human milk, the curd from the former being tough and hard, while that from the latter is soft and flocculent; the next step forward was to add some dilutent to milk in place of water that would change the curding property in such a way as to render it more like that found in human milk. After considerable investigation came the use of cereal gruels; the addition of barley, rice or oatmeal gruel to milk made the curd soft and gelatinous and enabled the infant stomach to digest

a larger percentage of proteid than it had been able to do by any other method of modification. By this formula many babies were enabled to take cows' milk who could not do so before, and to take it in sufficiently strong proportions to cause them to develop and gain in weight in a normal way.

But we ran up against another difficulty in feeding very young infants; that was the fact that they had no amylated ferment with which to digest the starches, and often a train of symptoms difficult to overcome was set up by them. This trouble was partially overcome by dextrinizing the starch with cereo or some starch-converting substance. For babies whose power of starch digestion has developed this is the best food we have to-day, and meets the indication for a baby food more nearly than any other known method of milk modification.

There are still left, however, those very young infants who can't take starches, and older babies whose power of proteid digestion is so poor that they can not take any of the milk foods mentioned sufficiently rich in proteid to cause them to develop and gain weight.

The studies of Hart and Van Slyke have proven that the soluble proteids in cows' milk constitute only one-fourth of the total proteids, while in human milk it is about two-thirds. There are probably other differences in the caseins in the two milks which have to do with the difference in their digestibility, but the character of the curd seems to play the most important role. As we have seen the caseinogen or calcium-casein in cows' milk makes up 2.66 per cent of the proteids, the soluble or whey proteids .84 per cent. The whey proteids are not coagulated by dilute acids such as are found in the stomach, nor by rennin. The same is true of the proteids in mothers' milk, but the soluble proteids are largely in excess in mothers' milk. It has been demonstrated that when whey, cream and milk are combined in such proportions that the percentages of caseinogen and whey proteids conform to those found in mothers' milk that the curd

formed in the stomach is soft and flocculent. For that reason it is more easily digested than the curd formed from cows' milk when modified by the addition of water or by the gruels. This combination of caseinogen and whey proteids is spoken of as "split proteids." For feeding babies in the earlier months and those whose digestion has been impaired by wasting diseases, this combination seems to meet the indications more perfectly than any of the foods heretofore prepared. The preparation of this food is not more difficult than making ordinary gruel and milk mixtures. The only difficult part of the procedure lies in calculating the percentages of the different ingredients; but by means of formulæ that have been prepared by Dr. Maynard Ladd, of Boston, it is made very simple.

To prepare a pint of whey you heat a quart of fresh milk to 100 degrees F., and add two teaspoonfuls of essence of pepsin, mix thoroughly and allow the curd to form; then beat up the curd with a fork and strain through a sterile cheese cloth; put on ice and cool to 50 degrees F.; before adding more milk or cream the whey should be heated again to 150 degrees to kill the rennit enzyme.

To prepare a whey mixture of low proteid percentage for a young infant to contain, for example: Fat 4 per cent, sugar 7 per cent, and proteid 1.65 per cent, you would refer to the card and pick out a formula with the desired proteid percentages. For example, formula 23, which is: Fat 4 per cent, sugar 7 per cent, proteid 1 per cent. The percentage of caseinogen is .75 per cent, soluble proteid .25 per cent. By reference to this formula we see that it requires five ounces of 16 per cent cream, one ounce of fat-free milk, one ounce of lime water, 1.16 measures of sugar, and thirteen ounces of water. We wish to add all the soluble proteid possible, so we replace all the water by whey, which gives .90 per cent soluble proteid. If we desired to add less than .90 per cent soluble proteid, the number of ounces to be added would be found by multiplying the number of ounces in the whole

mixture by the percentage of whey proteid desired, less one-fourth of the proteid in the card formula. For example:

$W=Q\left(Y-\frac{P}{4}\right)$.
$W=20\ (.90-\frac{1.0}{4})=13$ ounces.
W=Number of ounces of whey needed.
Y=Percentage of whey proteid desired.
P=Proteid percentage in card formula.
Q=Total number of ounces in mixture.

In starting a baby on whey mixtures it is always wise to begin with low fats and proteids and gradually work up to that strength that will cause the proper gain in weight, being careful to watch the stools for signs of imperfect digestion.

It has been my practice in beginning whey mixtures after an attack of dysentery, or after weaning, to begin with whey alone for a day, then gradually add cream and milk until the proper strength has been reached. The change from that diet suitable during an attack of summer diarrhœa to any milk food is often a dangerous procedure for, should the milk fail to digest, often the whole attack is repeated and with less strength on the part of the patient to withstand it; hence the necessity of finding a milk easy for a diseased stomach to digest and assimilate. The digestibility of this mixture may be further enhanced by peptonizing the mixture in order to help the stomach to tide over that stage in which the digestion is practically at a standstill. The treatment of summer diarrhœa has largely resolved itself into a question of feeding, and by far the most important step in prophylaxis is carefully regulating the food before the infant is taken sick.

While the proprietary foods serve a useful purpose in supplying a temporary food during acute illness in infants, we are all too prone to put too much faith in them as a permanent food. The whey and cream mixture is suitable for young infants especially, and has proven itself superior to all others in older infants while they are regaining their power of digestion after summer complaints.

There are very few points to be remembered in preparing whey and cream mixtures, but there are a few that one must memorize in making any milk food. For example, the number of ounces of top milk necessary to obtain a given percentage of fat, the preparation of the whey and the percentages of fat, sugar and proteid required at different ages. The card prepared by Dr. Ladd is a very useful part of the pediatrist's armamentarium, and makes the feeding of infants a much more simple matter than it has ever been before.

SCARLATINIFORM ERUPTIONS.

BY J. STEVEN BROWN, M.D., HENDERSONVILLE, N. C.

The fact that many pediatrists advocate a fourth exanthem, Duke's disease, coupled with my observation of atypical eruptions, form my excuse for this report.

Many times do we see eruptions following the application of such counter-irritants as turpentine and kerosene. Sometimes these eruptions very closely simulate scarlet fever and are often followed by a similar desquamation. Just so we have all grades of erythema and dermatitis arising from alimentary disorders and other local and systemic causes. These are not infrequently followed by more or less desquamation. When they occur during a scarlet fever epidemic the differentiation is exceedingly difficult. I recall two such cases occurring during a mild epidemic of scarlet fever. One afternoon a two-year-old spied a basket of green grapes, and in the absence of restraint gorged to his heart's content. That night nausea and vomiting ensued. The next day a scarlatiniform eruption puzzled his physician. There had been no known nor even suspected exposure to scarlet fever. Notwithstanding the protest that he and other members of the family were subject to acute attacks of eczema all members of the family were instructed to maintain a provisional quarantine. Under free purgation and boro-carbolic inunctions the itching and eruption finally subsided after two weeks duration. Some three weeks later decided desquamation occurred. No nephritis nor other complications were observed. Person and apartments were disinfected. Seven children older and younger in the house were constantly exposed, after duly cautioning the parents. No other cases developed till nine weeks after the first eruption, a month after disinfection, when the oldest sister, simultaneously with several schoolmates who had not been exposed to this

case, developed a mild case of scarlet fever. She was isolated. No other cases developed. Simultaneously with the first case and in another part of the same town and under the observation of another physician another boy ate grapes, riper but not quite ripe. He too became sick and red and vomited and puzzled his physician and was isolated for nearly two weeks, and later had a slight desquamation. Quarantine having been lifted before desquamation began, a number of children were associated with him during desquamation, yet no contagion was reported. Neither of these cases was apparently caused by or causative of or in any way connected with any of the more authentic cases except as above mentioned. Before, during and after these cases there were a number of cases of scarlet fever reported. Some were complicated with nephritis. Could all these have been Duke's disease? or were they scarlet fever? or were the two reported cases in no way contagious and due solely to alimentary disorders?

ILEO-COLITIS.

BY H. L. MONK, M.D., SPENCER, N. C.

Inflammatory diarrhœa, in which in addition to the septemic infection, the symptoms of an acute local inflammation have a prominent part.—Holt.

Etiology.

Hot summer weather is one of the chief causes of ileocolitis, as it is of all bowel troubles of an acute nature, which is evidenced by the frequent occurrence of epidemics of frightful mortality and by the statistics from all large cities in the temperate zone. Whenever the minimum temperature for the twenty-four hours reaches 60 degrees F. infantile diarrhœas of all kinds assume an important part of a medical man's work. Doctor Ballard claims that the onset of these cases begins when the thermometer registers 56 degrees F. four feet below the surface of the earth. Age is a most important factor, and we find most cases occurring between the ages of six months and two years. Mode of feeding plays perhaps the most important factor in these troubles, especially children who are weaned or are placed partially on artificial food. Mothers take their children from the breast and begin feeding them on the diet taken by the family or upon a diet of cows' milk, defective in composition, oftentimes given too frequently, and in too large a quantity, thus setting up an indigestion which is oftentimes the starting point of ileocolitis. The milk supply is often contaminated, and since the infant's stomach is deficient in the secretions of hydrocloric acid, which by competent authorities is considered bactericidal to the germs taken in the food; we have infected milk passing direct into the bowels. Defective hygienic conditions, previous acute diseases, malnutrition in all its forms, especially rachitis, syphilis and tuberculosis. The prostration from summer heat, and any special excitement. The

nerve irritation, due to dentition, which has a depressing effect on digestion, is a prominent predisposing cause of ileo-colitis. Pregnancy in some mothers renders their milk indigestible; if allowed to continue to nurse will oftentimes be the forerunner of this disease.

The Symptoms.

Ileo-colitis usually begins abruptly and for the first few days can scarcely be distinguished from acute catarrhal diarrhœa or gastro-interitis. The vomiting is not so persistent, and the temperature, which is very high in the beginning, soon drops to about 102 F. and remains about this temperature, with not very great variations, and the motions are of a green or greenish-yellow color and are of great frequency. After two or three days the stools assume a characteristic appearance. They become of grass-green or brown color, small amount of blood, a great deal of mucous, very small in quantity, and the movements are accompanied with much pain and straining. They may have a slight odor or may be very offensive and putrid. Microscopical examinations show undigested food, epithelial cells, pus-corpusles, streptococci and other bacteria. There is a distinct distention of the abdomen, tenderness along the course of the colon, and if you can secure a sample of urine, you will often find a small quantity of albumin. If these symptoms persist for a few days the constant straining will lead to the troublesome condition of prolapse of the bowel. In favorable cases, in which proper measures have been faithfully employed in from seven to fourteen days, these symptoms begin to subside, you will notice a diminution in the amount of blood and mucous, they become less frequent, and the pain and tenesmus gradually subsides and the child's countenance assumes a placid and contented expression. These cases are nearly always slow in convalescing and the greatest care is necessary in handling these cases, as the slightest indiscretion will lead to a relapse and the inflammatory process go on to ulceration. The persistence for two or three weeks of brown stools and moderate

pyrexia with failing nutrition, are, according to Holt, indicative of ulceration. In this form, the temperature remains very high, the motions are very frequent, and contain much blood and the infant soon falls into a typhoid state, in which you find stupor, delirium, and frequently convulsions. If the case survives, the symptoms may moderate, but the prostration is extreme, and some pulmonary or cerebral complication is apt to relieve the sufferer. In these cases recovery is very tedious and for several months the patient must be watched. The *membranous type* is fortunately rare. In this type the symptoms of the other varieties are exaggerated with a quantity of blood, and the patient early lapses into a typhoid state. An examination of the stools under water shows oftentimes mucous threads, or even pseudo-membranes.

Diagnosis.

This must not be confounded with intussusception. Remember that in intussusception we may have vomiting, bloody stools and tenesmus, and have no pyrexia. Later on the stools contain no fæcal matter. With the tenesmus, the tympanites and the stercoraceous vomiting makes the differentiation easy. Typhoid fever is too infrequent in childhood to require further than a casual mention.

Prognosis.

The prognosis is dependent upon the vitality and strength of the infant, the hygienic and dietetic conditions that can be secured, the severity of the attack and the season of the year. Delicate infants, in unsanitary surroundings generally succumb early. Continuous high fever, the presence of a large amount of blood and the severe nervous symptoms with extreme feebleness manifested by weak heart actions are to be regarded as unfavorable cases.

Prophylaxis.

In no single disease is prophylaxis so important. We as physicians can do much to reduce the mortality from ileocolitis by having our patients to avoid, when practical, wean-

ing their babies during hot weather; by having them feed their babies, after weaning on wholesome milk and other easily digested foods, by avoiding too much exposure to the hot sun, by keeping them properly clad, by relieving the cases of indigestion and slight diarrhœas, by thorough ventilation of the living rooms and providing shade for proper recreation during the hot weather. By sending them to the mountains or seashore or even to a shady country home if child's condition demands a change, and by looking closely after the acute eruptive diseases of childhood.

Treatment.

The same general measures are to be employed as in cases of gastro-interitis. Milk and all milk foods are to be forbidden. A full dose of castor oil or an efficient dose of calomel are to be given at once, followed in a few hours with a copious irrigation of the colon with a saline solution. The compress to the abdomen is sedative and is always of service. After two or three days have elapsed, if the painful straining persists, one or two drachms of starch water to which a few drops of laudanum have been added should be thrown gently into the bowels and retained by pressing the buttocks together. This will generally moderate excessive peristalsis and lessen tenesmus. These injections may be repeated every eight hours if necessary. If the amount of blood is excessive a pint of hot water, to which one drachm of fluid extract of hamamelis has been added, should be used to irrigate the bowel, using a soft rubber tube introduced about six inches into the bowel and holding the syringe not more than two feet above the patient. After the acute symptoms have subsided, tannic acid or a weak solution of nitrate of silver may be substituted for the hamamelis, and in many cases are of undoubted advantage to the patient. During the first few days five or ten drops of castor oil to two or three drops of paregoric given at two or three hour intervals is of great benefit to most patients. Later, one of the insoluble preparations of

bismuth suspended in mucilage should be added to the treatment and given in doses of from ten to thirty grains. Intestinal antiseptics are of very doubtful advantage and had best be left off. Tannigen and bismuth in dose of five grains each given in powder are more astringent and are of value in cases of excessive diarrhœa. Endoxin and tincture of iodine are much lauded by many authors, but perhaps are not superior to regular treatment. French brandy, or any old brandy, is one of our chief "standby's," and is required in every case of severe ileo-colitis. Cool baths or alcohol sponges should form a part of our treatment. The diet should be of barley or rice water, whey, orange juice, peptonoids, etc. Later in the attack beef broths followed by peptonoided milk during convalescence. The serum treatment is much lauded by many clinicians.

PNEUMONIA IN CHILDREN.

BY J. A. TURNER, M D., HIGH POINT, N. C.

In attempting to offer a paper to the Society on the subject of Pneumonia in Children, I do so with a full conviction of my inability to discuss the subject in the way that its importance demands. Nor am I induced to try to discuss it on account of any special knowledge of the subject or for the purpose of advocating any theory as to etiology or any specific treatment. But rather on account of my feeling of utter helplessness when called to treat a little sufferer in the grasp of this disease, have I felt perhaps a deeper interest in the management of it than perhaps any other. On account of its widespread prevalence and its great mortality it is in my opinion a subject of the greatest importance. Our profession has since its early history recognized the disease and men of great accomplishments have studied it with the greatest care, and still the mortality is little changed in spite of the many different modes of treatment advocated and pursued. How often have we been called to the bedside of an innocent sufferer to find perhaps the only child of fond parents or the bright particular star and heir upon whom the perpetuation of a family and name may depend, and have our hearts sink within us when we see the well-known signs of this disease?

I shall not attempt to enter into a discussion of the etiology of the disease, for I am convinced that there are many causes that produce it and that the pneumococci is merely an incident and not a cause. I shall not attempt to delineate the varieties of the disease and will speak only of the form most frequently met with in our daily work. Of these catarrhal pneumonia is "the" pneumonia of children, during the past twenty years, or since the great prevalence of influenza I do not remember to have seen but a few cases of croupus pneumonia, not that croupus pneumonia is less rare, but that ca-

tarrhal pneumonia is so very common. I do not recognize the so-called condition of capillary bronchitis.

Symptomatology.—In catarrhal pneumonia dullness on percussion may be absent, on the first examination, being found later, scattered over both lungs and more extensive at the bases, where showers of subcrepitant rales may be found in abundance. In the course of a few days scattered areas of dullness, associated with bronchial breathing and moist rales, indicating atelectasis, are found. Of these some are constant, others appear and disappear, shifting dullness. They may be small and numerous, or massive and include the greater part of a lobe or lung. Massive areas are constant.

As these signs develop the symptoms become correspondingly severe, dyspnœa increases, respiration is accelerated to from 60 to 70, pulse small and fluttering, indicating cardiac failure, delirium cephalgia, retraction of head, tenderness of scalp and convulsions, meningeal symptoms, due to the toxic effect of the disease on the brain; *i. e.* that the symptoms referable to meningeal envolvement are due to a toxæmia resulting from the disease, and not from the disease *per se.* This conclusion is substantiated by post-mortems, in that they show only anæmia of the brain and its membranes, without evidence of inflammation. Clinical evidence further corroborates this, in that the symptoms are directly increased in proportion to the extent of the disease.

Fever ranges from 99 to 104 4/5 F., in ordinary cases, and as it is only the uncomplicated cases that I shall consider in this discussion, those which are secondary in character, being of necessity altered in their symptomatology by the preceding or concurrent disease, I shall likewise avoid in my considertions.

Prognosis.—Pneumonia in any form and at any time of life is a dangerous disease, but it is especially so in children. Statistics show as great a mortality as 85 per cent in cases that occur in the first years of life, and diminish with age. The previous condition and the surroundings should not be

overlooked or forgotten in the prognosis, and in a Rachitic case should be especially guarded. This disease having no definite limit or cycle, is little influenced by treatment, as to time of termination.

The management of patients suffering with this disease I consider to be entirely individual, each case demanding a treatment in the main different from the other. Some of the worst cases that I have seen recover have done so practically without medicines or other therapeutic measures. I have in mind at present the instance of a bright little boy, the son of an highly esteemed confrere, who positively refused medicines, food, water, and interference of any kind for days, making a perfect recovery, and during this stage of his illness was supposed to have had brain complications. This is only one of a number of similar cases and is referred to especially as being of that class of refractory cases so often met with in our experience.

The first point to which our attention is called is that of fever, cough, difficult and rapid respiration. These symptoms, we are inclined, as are the parents, to look upon as the disease rather than the effects of a morbid condition going on in the system that produces them. The fever is the condition that first calls for attention in the majority of instances, and unless wisely and prudently managed is the point in the battle where we weaken and exhaust the forces upon which the recovery of the patient depends.

Antipyretic treatment is the first considered, viz, medicines, and the local application of cold. The first is the more convenient, and to the parent the most satisfactory, as the child will resist a palatable dose of medicine less than the applications of cold. They are, however, delusive and harmful in the end, and if used, should be with the greatest caution and care. Of these the coal tar products are the most active and consequently the most dangerous, and their administration should be attended with greater caution than some of the less active preparations. Aconite and veratrum perhaps are next thought

of, and each have their advocates by men of judgment, skill and reputation. To me each has been disappointing and discouraging. In no instance should the coal tar antipyretic be given, except in those cases of hyperpyrexia, with impending or active convulsions, and then only when cold applications can not be applied. Aconite and veratrum are little less indicated and equally dangerous. I prefer cold packs, ice bags, to the chest, when the temperature goes above 103 F., cold sponging to back and chest with water, with towels wrung out in ice water to the head.

The disease having no definite limit, and running no cycle, the tendency being to destroy the vital powers, and the time of termination being little influenced, by treatment other than that directed to the support of these failing powers and to the maintenance of the secretory and excretory functions.

It is my opinion that the use of cardiac stimulants and tonics should not be delayed for a longer time than the first evidence of overwork of the heart, viz: small, rapid pulse, with cynotic symptoms, resulting in the venous system becoming overloaded with the circulatory fluids, due principally to failure of the capillary circulation, from vasomotor paralysis. The remedies which I have found to be the most useful in combating this condition are digitalin (merk) in combination with strychnia, and these being pushed to their full physiological effects. Should more powerful stimulants be called for or demanded, it has been my custom to rely on hypodermics of camphor and oil.

Ammonia perhaps has its place, being not only a cardiac stimulant, but one of respiration as well, and further, for its effect in decreasing the amount of fibrin ferment in the blood, thereby lessening the liability to heart clot.

Mercury I believe to be indicated, for its influence on the secretory functions, especially of the liver, as much depends on the destructive power of this organ, on the existing toxins, and is perhaps not without its good effect as a solvent of the inflammatory exudates of the lungs. It should be given with

prudence and care. The best results are obtained from small and repeated doses.

On account of the hebetude and the partially comatosed condition, the patient often fails to pass his urine, with the consequent overloading of the bladder, adds greatly to the discomfort of the patient, and should not be neglected.

The bowels should be kept open by the use of castor oil or enemas of saline solutions, the latter supplying the deficiency of fluids caused by the exhausting fever and its stimulating and antitoxic effects upon the system. In the event that diarrhœa should supervene, an effort should be at once made to correct the same, by a change of diet and by such remedies as may be indicated.

Owing to the exhaustive character of the disease and the probability of its long continuance, the powers of the stomach should be carefully guarded, and only such nourishment as is easily assimilable, and which makes the smallest demands upon its digestive functions should be administered. That these conditions be fulfilled, it will be found necessary to limit the diet, and in the main this should consist of liquids, as milk, broth and partially cooked eggs.

Surroundings. These are mentioned last on account of their importance. It is now conceded that in all pulmonary diseases an abundance of fresh, cool air is of paramount importance. To obtain this the bed should be so located that the face and head of the patient shall be exposed to the free circulation of the uncontaminated air of the outside; the body and limbs being protected by appropriate covering that is both light and warm.

Sleep and quiet, being important essentials as to the welfare of the patient, it becomes necessary that his food and medicine be given at definitely stated periods, and only on these occasions should any disturbance be permitted, and no one except the attendant in charge should be permitted to remain in the room.

PLEURISY IN CHILDREN.

BY J. R. McCRACKEN, M.D., WAYNESVILLE, N. C.

In considering this subject, it is not my purpose to enter into a detailed description of all the different forms of pleurisy that are seen in childhood, as all the forms seen in the adult are seen also in the child, and as to the pathology of the disease there is no essential difference between pleurisy in adults and pleurisy in children, the principal difference being one of etiology.

According to Holt, dry pleurisy as an independent clinical disease has no existence in infancy or early childhood, being always secondary to affections of the lung, and some authors doubt if it ever occurs as a strictly primary disease. As in the adult most cases of pleurisy are secondary to diseases of the lung, and in infants this is perhaps true in 90 per cent of all cases. It is occasionally seen complicating, or as the sequel of some of the acute infectious diseases, such as scarlet fever, measles, typhoid fever and influenza. In adults tuberculosis is perhaps the most important etiological factor, while in children, and especially before the seventh year, this is an exceedingly rare cause. This, perhaps, accounts, in a degree, for the fact that the seemingly primary cases occur so much more often in adults than in children, and may also account for the fact that the dry and sero-fibrous forms, the forms most often due to tuberculosis, are most frequently seen in the adult, while empyæma, or the purulent form, is more frequent in the child. Among other causes of pleurisy might be mentioned necrosis of a rib and traumatism.

Since dry pleurisy is exceedingly rare, and pleurisy with serous effusion not at all frequent in children, we will pass at once to a consideration of empyæma, the form most often seen in childhood and the most important form of pleurisy with which the physician has to deal. Perhaps 90 per cent of these cases occur with, or follow pneumonia, being a com-

plication of that form known as pleuro-pneumonia. In my opinion this is as often overlooked, or unrecognized, as any serious affection of childhood, as so many physicians dismiss their pneumonia patients so shortly after they have passed the crisis, and in cases where dullness and irregular fever persists, too many physicians are willing to satisfy themselves with the belief that they have an unresolved pneumonia, and that a little time will make it all right, thus letting them go on to a fatal termination when by a little effort and timely interference life could have been saved.

As to the symptoms, physical signs and diagnosis of this condition, I have nothing to add to that which may be found in most any text-book on general medicine, or diseases of children, but I would emphasize the importance of the use of the exploring needle in making a positive diagnosis. This should be practiced in every case where there is a suspicion of fluid of any kind, as it is a simple procedure, unattended by any great pain, and the dangers are so slight as hardly to be considered. Simply introduce the needle between two ribs, preferably the seventh and eighth, in the middle or posterior axillary line, and draw the piston of the syringe. If the result is negative repeat the procedure in a different location, as the fluid might be sacculated and not reached by the first attempt. I use a glass barreled syringe and a long needle. In introducing the needle I push till I fail to meet resistance, then draw the piston. If I fail to get fluid I unscrew the syringe, leaving the needle in place, replace the piston, screw the syringe back to the needle, and push the needle in till I am sure it has passed through the chest wall, then gradually withdraw the needle, drawing the piston at the same time, and if there is fluid present I am most sure to get it. This may seem a small matter to go into details about, but we don't want to be introducing the needle more times than we can avoid, and we do not wish to be introducing air into the pleural cavity when it is not necessary. In children a needle three-fourths of an inch long will usually be found of sufficient length.

The prognosis of empyæma in children under one year old is particularly bad, the mortality, according to Holt, about 75 per cent; in children over two years old, when seen reasonably early and receiving proper treatment, the outlook is fairly good. This is especially true in the case complicating pneumonia, the recovery in these cases being often surprisingly complete. In the cases complicating typhoid and scarlet fevers, the outlook is much more serious, since in these cases the condition is so often due to streptococcus, or to a combination of the streptococcus and the staphylococcus, these being much more virulent germs than the pneumococcus.

Spontaneous recovery by absorption may take place, but this is so rare that it should not be hoped for. The pus may be evacuated by rupture through the visceral pleura into a bronchus and may be coughed up. This is the most favorable method of spontaneous evacuation. Other means of natural termination are by burrowing through the chest wall and forming a pointing abscess, by rupture into the œsophagus and by opening through the diaphragm into the peritoneal cavity and appearing as a psoas abscess.

Out of 19 cases of empyæma reported by Schmidt, in which there was spontaneous discharge of pus, 17 died and 2 recovered. Of 32 cases reported by Rilliet and Barthez which received no surgical treatment, 21 proved fatal. Nathan, of one of the German hospitabls, reviews 145 cases of empyæma in children observed during an attendance of 13 years, the mortality in infants under one year old being 97 per cent, the lowest mortality being 25 per cent, this being in children between eight and nine years of age. Out of the 145 cases 43 were cured and 93 children died, the others remaining diseased. It is interesting to note that the author followed up the histories of 34 cases discharged as cured and found their condition good. Only two were afterward found to be subject to tuberculosis, this proving our statement that tuberculosis doesn't play the part in pleurisy of children that it does in pleurisy of adults.

Empyæma is almost purely a surgical disease, but it is well to give some tonics and to order an easily digested, nourishing diet; the medicines used are principally to build up the condition of the patient, and I have found good results from a preparation of cod liver oil containing creosote and guiacol. In my opinion the pus should be evacuated as soon as it is found to be present, provided the condition of the patient will permit, though some physicians prefer to wait till the period of acute inflammation has subsided, as shown by lower temperature and stationary physical signs. Aspiration as a cure for empyema is a failure, and is now rarely employed except in cases where an immediate operation can not be done and the symptoms are urgent; in such cases it is employed for temporary relief only. Simple incision with drainage is the operation most often employed, and while I do not intend to go into the technique of the operation I will mention some precautions that are important and should be regarded. The incision is often made too short and the drainage tube often too soft and too small. The incision should be at least one and one-half inches in length; for when short the action of the intercostal muscles bends and compresses the tube and causes it to become plugged. Many physicians make a mistake in using a tube too small; in such a case drainage is not free and a small tube is much more liable to become plugged with fibrin. The tube should be made of heavy rubber fenestrated and as large as the width of the intercostal space will accommodate; if it is a half inch in diameter all the better. Holt advises the practice of introducing two tubes side by side for the first few days. This diminishes the danger of having a tube plugged with fibrin and also diminishes the chances of having a tube compressed between the ribs or by the action of the muscles. Two tubes having more resistance than one. I have wondered why we do not have a specially constructed tube for the purpose, made of hard rubber fenestrated and having a thick, close-fitting, soft rubber shield to rest against the side when the tube is introduced; with a tube

of this kind there would be no danger of compression and the only objection I can see to such a tube is that it might produce erosion of a rib. The usual duration of the discharge in cases treated by simple incision is from three to six weeks, the average being about five weeks.

The operation of resection of a portion of a rib is advised by some surgeons as a routine practice; but in my opinion, if the precautions I have mentioned are observed this is necessary in only a limited number of cases, the indications for resection being overlapping of ribs, or very narrow intercostal spaces. In some chronic cases which have been neglected and in which the lung is bound down by firm adhesions a still more radical operation is sometimes required, that of removing portions of several ribs, and is known as thoracoplasty, or the operation of Estlander. After drainage is established in cases of empyæma in children, I think it advisable to encourage expansion of the lung by some form of respiratory gymnastics. The apparatus of James is both simple and effective for this purpose. It consists of two bottles with perforated corks connected by a rubber tube. One bottle is placed higher than the other and the child, by means of a blowing tube, forces a colored fluid from the lower into the higher bottle and allows it to siphon back. This amuses the child, encourages expansion of the lungs, and causes the expulsion of the fluid from the cavity. These cases often make a surprisingly complete recovery and in an incredibly short time.

Case 1.—On February 13, '08, I was called five miles in the country to see a boy and found him suffering with pneumonia in the lower lobe of the left lung and also severe pleuritic pain. On the second visit I found the right lung involved also, pain in that side, however, being very slight. The pneumonia ran the usual course and the crisis occurring on the eighth day, and it seemed that he was going to make an uneventful recovery, notwithstanding the fact that dullness persisted in the left side. In about five days he began to have a second rise of temperature, and I discovered that

the left side was gradually filling with fluid. After trying diuretics and other means to encourage absorption for a few days, I introduced the exploring needle and got a syringe full of pus, and on the following day, March 4, I operated under chloroform anesthesia, doing a simple incision. The general condition of the patient at once began to improve and in about five weeks the tube quit discharging. This case was complicated by a large abscess just below the right clavicle, making its appearance about five days after the operation. After incision and drainage it discharged quite freely for about a week and healed. To make sure that I had not overlooked an empyæma in the right side, and that this abscess had not originated in an effort at spontaneous evacuation, I introduced the needle into the right side of the chest and got nothing but a few drops of serous fluid. By the time the tube quit discharging the patient had almost regained his former strength. This boy was in my office about one month ago and said he was entirely well and could tell no difference between his right and left sides.

Case 2.—On March 19, '08, I was called in consultation with a physician seventeen miles in the country to see a little girl four years old. The history of the case as given me by the physician was that about eight weeks previous to that time he had been called to the child and found her suffering with typhoid fever; that the fever had persisted for about four weeks and gradually declined, the temperature some days prior to calling me being subnormal. I found the child very much weakened and emaciated. Upon examination of the abdomen the results were negative, but when I passed to the chest I soon discovered that the right pleural cavity was filled almost to the clavicle with fluid, and upon using the needle found it to be pus. The intercostal spaces were very narrow, and I was at once convinced that the best method of operation was to do a resection; but this I was not prepared to do, having with me only a small pocket case of instruments and seventeen miles from town; so thinking that I might get good

results, I did an incision under primary chloroform anesthesia. I kept the wound open for several minutes by pressing the ribs apart with forceps and evacuated most of the pus before putting in the tube; the tube was small, made of a soft rubber catheter, but it seemed that drainage started up nicely. I left instructions with the physician to watch closely and if the tube didn't keep up drainage to notify me. I was very much encouraged when he reported next day that the tube was discharging freely and the patient doing well. I had no further report until a week later, when I heard the little girl was dead. The report coming to me was that the matter all ran out and tube quit discharging on the second day after the operation, but that the patient was so weakened by the fever and the abscess that she just couldn't get well. I leave you to draw your own conclusions, and I censure myself as well as the other party, for in this case a resection should have been done even if it was inconvenient to do it.

REPORT OF A CASE OF PSEUDO-LEUCOCYTHEMIA INFANTUM.

BY JAS. A. TURNER, M.D., AND WM. M. JONES, M.D., HIGH POINT, N. C.

In reporting this case we do so for two reasons: first, on account of its rarity, as it has been only a very few years since Von Jaksch demonstrated that it was a separate and distinct disease, the records are therefore very meager as to cases; second, for the fact that it has not been a secondary condition, or sequence of any long wasting disease, and also for the fact that recovery has been complete.

In 1889 Prof. Von Jaksch, with Monti and others, conclusively demonstrated the fact that this was a separate and distinct pathological condition, from other forms of Leukæmia; and it has for this reason been called Von Jaksch's Disease, or anæmia pseudo-leukæmia of infants, etc.

Case.—M. J.....; female; six (6) months.

Family History.

Father of the better class of day laborers; age, 31 years; specific history, negative; strong and healthy; no history of any inherited or constitutional disease.

Mother; health good; age, 20 years; has had two children; specific history, negative; no appearance of any wasting disease; labor normal and easy in both cases; no complications following; both breast fed.

Brother; age, 2½ years; strong and robust; has always had the very best of health; teeth developed early and uniformly; no appearance of rachitis.

Previous History.

Birth, normal; mother fed. Thought to have been an especially healthy child until it was three (3) months old, when the present trouble began.

Present History.

On about January 18 ult. mother noticed that the child had what appeared to be a slight cold, for which she administered the ordinary household remedies without effect. On the 20th ult. a physician was called, who pronounced the case one of pneumonia, for which he treated it until the 10th day of February, at which time a large swelling was noticed in the left side of the abdomen. This was treated as an abscess of kidney, with hot poultices, etc., and later as a nephroptosis. On February 15th we first saw the case.

Appearance.—That of extreme anæmia, the features having more the appearance of wax than of flesh and blood, conjunctivæ very pale, as were all mucous membranes. Child was very weak, so much so that it could not lift its hands, and when it cried, it was a very feeble effort.

Physical Development.—Head and face normal, with the exception of one eye, which was a little smaller than its fellow. No evidence of any post-nasal, laryngeal or pharyngeal abnormalities or the existence of any pathological condition affecting the same. Neck and chest were well developed, as were also the arms and legs. Abdomen was somewhat enlarged, and on the left side was a large tumorous swelling or enlargement, which filled the entire left lumbar and iliac, and extended anteriorly almost to the median line. There was no redness or other discoloration of the skin, other than that affecting the whole body. Child was not able to rest except when placed on its back. A few fine, moist rales were heard over portions of the chest, both front and back, respirations were accelerated, but without movement of the alæ nasæ. Pulse, fast, weak, and of small volume. Temperature, 101 F. Upon palpation of the large mass in the abdomen, it was found to be tender to the touch, as the child would always cry out; it was smooth and firm, and permitted of only slight mobility.

Blood Examination.—A very decided reduction in the per cent of hæmoglobin. Leucocytosis very greatly increased;

the exact proportion, however, was not definitely recorded. The cells observed were large polynuclear neutrophils and large mononuclears, which presented great variation in form and staining. Poikilocytosis was present, but to no marked degree; a few nucleated reds were also seen.

Diagnosis.—Pseudo-leucocythemia infantum.

Treatment.—Arsenic and iron.

Result.—Complete recovery.

COXA VARA.

BY WILLIAM MONCUBE, M.D.,
Instructor in Orthopedic Surgery, University of N. C. Medical Department, Assistant in Surgery, Leonard Medical School, Raleigh, N. C.

I present this subject with report of a case: first, on account of the rarity of the condition, and, second, because of its importance in the diagnosis of all hip-joint affections.

We do not find a great number of cases of coxa vara reported, but it does occur often enough to become an important factor in differential diagnosis of coxitis.

In regard to the etiology and pathology of this affection, I may say that cases have occurred in the course of acute osteomyelitis, osteomalacia, rachitis and otitis deformans. A certain number results from green stick fracture of the neck of the femur and separation of the epiphysis between the head and neck. Trauma may also operate in the production of coxa vara when we have a complete fracture of the neck uniting with shaft at a right angle or less vicious union.

There is a group of cases that arises without any assignable cause other than softening of the bone from undue hyperæmia accompanying very rapid growth in adolescence.

Given one of the above causes, we have the normal resistance of the neck of the femur reduced until it is no longer able to bear the strain of body weight. It then bends downward until the neck and shaft form a right angle or less, thereby elevating the trochanter and considerably shortening the limb.

With age and sex we find normal variations in the angle between the shaft and neck of the femur. When the angle becomes a right angle or less, marked symptoms of deformity appear, and we term the condition coxa vara, in contradistinction to coxa valga, where the axes of the neck and shaft approach a straight line. The condition is essentially one of

growing bone and may affect one or both legs. It seems to be met with oftener in males than females.

Symptoms.

The onset is usually insidious, without symptoms until the deformity is well advanced. There are very few subjective symptoms, and when they are present they consist chiefly of pain and discomfort in the hip joint with a disinclination to use the limb. When the condition is unilateral the shortening is very noticeable, varying from one-half to two inches. The trochanter is well above Nelaton's line.

When the affection results from epiphyseal separation, we may expect the shortening to become more marked as the individual grows older.

Motion in the hip joint is limited chiefly in abduction, because the trochanter is driven against the rim of the acetabulum or the surface of the ilium just above it. After excessive use of the limb in its deformed position, the irritation may be sufficient to give rise to moderate muscular spasm, resulting in flexion and external rotation. The shortening causes a most decided limp.

According to the forward or backward bending of the neck of the femur, we get eversion or inversion of the foot. Sometimes in unilateral cases we notice lateral curvatures of the spine.

Diagnosis.

This is usually not difficult and depends largely on the examination. When we find the trochanter well above Nelaton's line, shortening by comparison with the sound side and limitation of motion in abduction and rotation only, an absence of effusion or other inflammatory symptoms, we can safely make the diagnosis of coxa vara. A radiograph will always make the diagnosis positive.

Bryant's triangle will locate the shortening in the neck of the femur. When the condition is bilateral the diagnosis is more difficult and may have to depend entirely on the radio-

graph. In its incipiency tubercular hip disease may be confused with coxa vara. In "hip disease" the subjective symptoms are always more marked and motion is restricted in all directions; the nerves supplying a joint supply the muscles surrounding that joint. The limitation of motion in "hip disease" is due to muscular rigidity, while that of coxa vara is mechanical from the elevated trochanter impinging against the ilium.

The shortening of "hip disease" is only apparent until very late in the process, but that of coxa vara is actual, and Bryant's triangle demonstrates the fact that the shortening is in the femoral neck. Coxa vara may complicate hip disease in its later stages when the bone becomes "worm eaten" and thereby unable to sustain the weight of the body without bending.

Congenital dislocation of the hip may also be mistaken for coxa vara. In congenital dislocation the head of the bone is not in the acetabular cavity and can be found in an abnormal position. In coxa vara the head of the bone is in the acetabulum and the trochanter moves through a greater arc in rotation. The reverse is the case in congenital dislocation.

Prognosis.

This varies with the etiology, but in general is very good as to restoration of function. After the bone becomes ossified in a deformed position we can not expect to get improvement without some form of operation.

Treatment.

If the case comes under observation early when the bone is soft and yielding, the first indication is to remove the body weight with crutches or apparatus. When it occurs in the course of a general disease as rickets, in addition to the constitutional treatment, it is necessary to maintain forced abduction in a plaster spica bandage.

Regardless of the etiology, when the bones are no longer pliable, some form of operation is necessary. Linear os-

teotomy seems to offer the best prospect of correcting the deformity and restoring normal abduction to the limb. In order to avoid entering the joint cavity, section of the bone is made just below the trochanter minor.

Cuneiform osteotomy has two serious objections: first, loss of bone followed by shortening, and, second, the greater amount of tissue-dissection necessary to expose the bone.

Report of Case.

L. H. (col.), aged 12 years, St. Agnes Hospital, Raleigh, March 15, 1908. Well nourished, healthy child, complaining of nothing except an aggravating limp. She has not had rickets nor an injury. Mindful of the fact that fracture of the neck of the femur is more common in the young than is generally supposed, the history was carefully searched for trauma, but without avail. Previous to December last nothing unusual was noticed, the child appearing normal in every respect. Since that time a gradually progressing limp has been noticed. There has been practically no pain nor discomfort in the joint.

On examination there was no difference in the circumference of her limbs, but a shortening of two inches on the left side. Bryant's triangle demonstrates the fact that this shortening was in the hip. There was slight eversion of the foot. The trochanter major was some distance above Nelaton's line. The gluteal fold on the left was more marked than on the right. Abduction was markedly limited by the elevated trochanter striking against the ilium. Rotation was very slightly affected. The trochanter moved through a much greater arc than on the right side. Effusion and other evidences of inflammation in the joint were absent. Other than limitation of abduction and rotation, there was no interference with joint motion. Muscular spasm was entirely absent. All other bones were normal and did not show evidence of previous rickets. The diagnosis of coxa vara was made and confirmed by a radiograph, which shows the condi-

tion perfectly. Under ether a subtrochanteric linear osteotomy was done, the limb strongly abducted and maintained in plaster. The plaster cast had to be reapplied four times, because by her carelessness she soiled and ruined each cast with urine.

During the operation nothing abnormal in the texture of the bone could be found.

At the end of the seventh week the last cast was removed and firm, bony union was established. On measurement the shortening was reduced from two inches to one inch. Abduction was restored and the trochanter was on an exact level with Nelaton's line. This gives her a much more useful limb, and I believe the shortening would have been reduced another one-half inch had she not destroyed her casts so often. While firm union has taken place, and the bone softening process has subsided, she will be kept on crutches a month or two longer, to guard against a possible return of the condition.

ARTIFICIAL INTERRUPTION OF THE PHYSIOLOGICAL CIRCULATION AS A THERAPEUTIC MEASURE.

BY E. T. DICKINSON, M.D., WILSON, N. C.

Through many centuries all therapeutic measures aimed at reestablishment of physiological functions. This seemed *prima facie* sufficient. Remove the cause and correct its effects is still the therapeutic watchword.

But paradoxical as it may seem it is certain that the interruption of physiological functions may be used to divert pathological processes. In prophylactic economy the current of an entire river has been reversed with the greatest benefit to the public, and it is now beginning to be known that the various physiological currents of the human body may be interrupted, diverted and even reversed with admirable therapeutic effect.

There are usually some disadvantages accompanying any interruption of physiological process. Essentially it is a rational therapeutics based on the choice of the lesser of two maladies.

Some form of inoculation was practiced many centuries among the peasantry of South Wales before Lady Mary Wortley Montagu came from Constantinople in 1721 and told in London about the Turkish inoculation for smallpox. In the highlands of Scotland, too, the practice was not unknown. There the operation was performed by tying infected threads about the wrists of children. The antiquity of the custom among Oriental peoples is well vouched for. Yet it is not antiquity, but authority which counts in therapeutics, and the authority of Lady Mary Wortley Montagu and her sponsors first gave inoculation a place among thoughtful people; and this seems to be the first imposition instituted by authority upon the physiological circulation. This opened the field which looks so attractive from our present point of view

into the wonders of serum and opsonic therapy—fields too large and soil too rich to be discussed at length in this paper.

The old-time venesector and vesecator worked more wisely than he knew. He did more than to draw out the poison as he thought. He interrupted a physiological blood current or a lymphatic current that had its unsuspected inhibitory effect in some distant pathological condition. The blister drew not so much poison from the blood as was supposed, but had its compensatory effect upon the suffering nervous system.

The treatment for erysipelas, called drawing the bloody fence, was perhaps the first direct interruption of the physiological circulation based on thoroughly understood principles. This treatment depends upon the cutting of the superficial lymphatics of the skin entirely around the infected area. This is a most valuable treatment that has the endorsement of the highest authority.

During the last fifteen years there has been in process of quiet development a system of therapeutics based entirely on various interruptions of the blood current. This has proved in many conditions of superior and unique value and promises even now to be in its very early infancy.

This treatment was worked out by Prof. August Bier in his Berlin clinic. He thought that an inflammation—from the physiological point of view—does not in itself represent a diseased condition, but is a phenomenon, indicating the body's attempt to resist a deleterious invasion.

To increase this beneficent inflammatory hyperæmia, resulting from the fight of the living body against invasion, is the aim of Bier's hyperæmic treatment. His explanation of inflammatory processes is in direct contrast with many time-honored views up to the present accepted as pathologic truths.

It has been considered the physician's duty to fight every kind of inflammation and to look upon them as essentially detrimental. Bier teaches just the opposite, namely, to artificially increase the redness, swelling and heat, three of the four cardinal symptoms of acute inflammation. Hence all

means that tend to subdue an inflammation are to be discarded.

It would be too much to consider here the many theories advanced in explanation of the effect of hyperæmia, but it is interesting to review some of the methods together with the various pathological conditions in which it has been used with satisfactory therapeutic effect.

Bier classes hyperæmia as arterial or active, and venous or passive. Arterial hyperæmia is usually produced by heat such as the dry, hot air that has been in common practice for rheumatism and other painful joint affections. Venous hyperæmia is induced by a nice degree of obstruction of the circulation of the part as by elastic bandages or vacuum chambers.

The application of the suction apparatus must be governed by two rules: the procedure should not cause pain; the suction should be intermittent with three or four minutes suction followed by one or two minutes intermission. This process is continued about one-half hour.

Hyperæmia by constriction is produced by placing a thin rubber band or bandage about the part, thus producing a congestion in the portion distal to the constriction. Here also the process should not be painful.

In our definition of inflammation we have regarded swelling as the cause of pain. Bier and Ritter have decided that pain ceases when swelling begins. Ritter regards the irritation of the peripheral nerves by concentrated exudates as the cause of pain. Artificially produced, congestion diminishes this concentration and apparently acts as Schleich's method of anesthesia.

In acute cases the duration of each treatment should be short, and in chronic cases for a longer period. This method has been successfully used in all cases of pyogenic infections and with varying success in tonsilitis, otitis media, epididymitis, orchitis, lymphangitis, arthritis, neuralgia, neuritis, varicose ulcers, ununited fractures, and persistent headaches.

Dr. Albert C. Geyser, of New York, has recently made a

preliminary report of new and physiological methods of treatment of pulmonary tuberculosis based on the principle of induced hyperæmia in the lung areas poorly supplied with blood and readily infected with the tubercle bacillus. His report seems honest and gives a large per cent of cures.

A series of experiments show that the hyperæmia induced in tubercular joints, both by the X-Ray and by iodoform injections, is a large factor in the improvement of these conditions.

This artificial hyperæmia departure is not claimed as a cure-all, or a fad for the specialist, but a rational treatment based upon sound principles, and can be used by every practitioner in his daily work. The more skilled one becomes in its use, the better will be the results. There will be failure in some cases, as there would be in any form of treatment, but it should not be discarded by any without an honest and intelligent trial.

DIPHTHERIA AND A WORD FOR ANTITOXIN.

BY E. M. HUTCHENS, M.D., BOONVILLE, N. C.

Diphtheria is an infectious constitutional febrile disease with local manifestation, generally in the throat or pharynx; it may be, however, in the nares or larynx, in the vulva of females, or it may infect any part of the body where there is a break in the tissues, especially that of the *mucous* membranes. Mr. Hare, of Philadelphia, says the disease is at first local, which soon becomes constitutional by the absorption of toxins, which is probably correct. It is not my purpose, however, to enter into a voluminous discussion of this subject; were I competent, time and space forbid.

Diphtheria has robbed the world of much of its greatness. It has put out the light of many beautiful and brilliant stars that were forthcoming to shed rays of intellectual light to mankind. Many a little bud has been nipped that would have made a beautiful flower to adorn and make glad the home, had it not been for that blighting and chilling little frost—the diphtheria bacillus. This little germ is especially fond of children, its greatest affinity being for those between two and fifteen years of age. Nursing children seem to be somewhat immune from the disease. It frequently attacks those in adult life. No age is perfectly immune. Second attacks of diphtheria are rare, but sometimes do occur.

The diphtheria bacillus is a very hardy germ, can live for a long time without the body. This little germ, which is the exciting cause of diphtheria, was unknown to the medical profession prior to the year 1883. In that year one Mr. Klebs discovered the bacillus, and his discovery was confirmed by Mr. Leofler the next year. Hence we have the Klebs-Leofler bacillus, this name being given to distinguish and perpetuate the names of the two great scientists who made the discovery, a distinction they well merited. Prior to this discovery the disease was treated empirically, the mortality death rate being

high, ranging in the different epidemics from 25 to 65 per cent. The ravages of the disease upon human life was fearful. The physician could only stand by helpless and see the life of his little patient *gradually* but *surely* smoulder out, or else in his ignorance of the nature of the malady, and in his zeal to do something for his patient, make a mop and apply some irritating substance, trying to mop out the membrane, thereby opening up the avenues of entrance for the toxins, thus hastening the termination of his patient.

To take a retrospective view of the past old-time treatment of diphtheria, after having the modern searchlight thrown on by eminent pathologists and bacteriologists, revealing the nature of the disease, it is a wonder any recovered under the old-time treatment. Yet some recovered in spite of both disease and treatment.

There are two varieties of diphtheria in which, under the old treatment, the mortality death rate was exceedingly high, viz: the nasal and laryngeal. In my private practice I have never seen more than one or two nasal cases, and not one laryngeal case recover. I have, however, under the modern serum-therapy treatment, to my glad surprise, seen one case of laryngeal diphtheria recover. And this case, a very bad one, I wish to report to this Society. This case was not primarily laryngeal, but became so secondarily, the disease spreading downward from the throat and attacking the larynx. The patient was a beautiful little girl, ten years of age. She was the youngest child, the darling and pet of the family. I was called by 'phone to see her on October 20, 1907. After driving a distance of eleven miles over rough roads I arrived at the bedside of my little patient. I noticed some external swelling of the throat; upon examination found the tonsils and greater part of the pharynx covered over with diphtheritic membrane, and the little patient getting hoarse. Pulse, 135; temperature, 101½.

Upon inquiry found some other children in the community had had sore throat.

This little girl had then been sick about five days; the family thinking it was tonsilitis had been trying home remedies. They did not become alarmed until the child began to get very hoarse.

I saw at once what a monster I had to deal with, and the most embarrassing feature about it to me was, I was unarmed; not having been informed of the nature of the case before leaving home. Country people take it for granted that the doctor always has everything he needs right along with him.

I had one package of 2,000 units of antitoxin at home which had just run out of date. This I was not willing to risk for two reasons: it was too old, and the dose was too small. Had I had it with me, however, I should have used it. What could I do?

I instituted the best treatment available. I washed out the child's throat with hot salt solution, and instructed father and mother to do this every three or four hours; gave internally fifteen drops of the tincture of the chloride of iron, diluted in water, every three hours, and 1/60 grain strychnine sulphate every six hours.

I informed the family of the seriousness of the case, at the same time telling them I had no hope in any treatment except diphtheria antitoxin, and not much in *that* so late in the disease; telling them the cost of the antitoxin. The father and mother both said, if there was a ray of hope in the antitoxin, to order it by 'phone and use it as early as possible regardless of cost.

So I left the little patient on the above treatment and returned home to order the antitoxin. I ordered two packages, 4,000 units each. Could not get the antitoxin until 2 p. m. next day. At this hour my antitoxin arrived and I set off for an eleven mile drive to the little patient, expecting to find it beyond hope. I arrived at the bedside of the little patient about 3:50 p. m. She could not speak to me. Aphonia was almost complete. She could only utter a high-

pitched whisper, which is so well known to us all who have once seen these cases of laryngeal stenosis. The little child was rolling from one side of the bed to the other, struggling for air, its tissues and life's blood starving for oxygen. There was a pale, anxious expression of the face. Pulse, 144; temperature, 102. The good mother was wringing her hands with grief, calling on me, with tears streaming, to do something for her dear child. It looked useless to try to do *anything*. I didn't think the child would live until morning, but I thought I would give it the benefit of the doubt. So I made ready at once and injected 4,000 units of fresh antitoxin, and washed out the throat with hot salt water. Continued the iron and strychnine. It was a little past 4 p. m. when I injected the antitoxin and washed out the throat. At 10 p. m., six hours after using the antitoxin, improvement was noticeable, the child began to breathe easier; and at midnight, eight hours after using the antitoxin, it got still and went off into a quiet, peaceful sleep. Its pulse was better. It slept until about 4 a. m., when it awoke. I now again washed its throat with hot salt solution, gave iron and norishment. Its pulse now was much better. Temperature, 100; a drop of two degrees. It again went to sleep and slept off the morning very quietly.

For diet of this patient we gave milk, eggs and brandy every two or three hours. After washing throat and giving nourishment I drove off for a day's driving to see other patients, instructing father and mother to wash the child's throat with hot salt water every three hours, and to give iron and nourishment every three, and strychnine every six hours.

I returned to the patient between 4 and 5 p. m.; found it bright and breathing easy. It was still very hoarse; could not yet speak above a whisper. Pulse was about 130; temperature had gone up a little, standing at 101. I washed out the throat with hot salt water. To my surprise the membrane was shriveling and beginning to peal, several small pieces coming away with the wash water. I injected 2,000

units more of antitoxin that was just out of date, having a package of that size on hand. Spent the night with the patient; she slept the greater part of the night; got a little restless a while before day. Next morning her breathing was still easy; pulse, 128; temperature, 99 4-5, but she remained very hoarse. After breakfast, about 8 a. m., I washed out the throat again with hot salt water. This time great sloughs of membrane came rolling out; now all symptoms seemed to be much better, except the hoarseness; she looked bright, but could not speak to me above a whisper. This symptom I did not much like. For fear my little patient might yet choke up, as I had to leave it quite a distance, I injected 4,000 units more of fresh antitoxin, and left; instructing the father and mother to wash throat every three hours with the hot salt water, continuing iron and nourishment every three hours, and strychnine every six hours.

Upon my next visit, next day, the little girl had so much improved she scarcely looked like the same patient. Temperature was normal; pulse, 100, and good. Upon inspection of the throat found the membrane had almost entirely disappeared. My patient could now talk to me. All symptoms much better; patient well on the road to recovery. I instructed parents to wash child's throat three times a day with hot salt water, give strychnine, 1/60 grain, before meals, and 15 drops of the tincture of the chloride of iron after meals. The little patient made an uneventful recovery.

As I have aforesaid in this paper, I have never seen a child in the condition this little girl was in but what it died, and I think that is the usual history of such cases; they generally die from suffocation; and I verily believe this one would have died had it not been for diphtheria antitoxin. I think this is one instance in which antitoxin robbed the grave of its victim. It's true I used other treatment in this case, but I give antitoxin credit for curing the patient. I have used this same other treatment in other cases, without the antitoxin, and they all died. I believe washing the throat with

hot salt water is of some value in dissolving the membrane, cleansing the throat, and preserving the tissues. There is one thing in this case that should not be lost sight of, and that is, the late date on which the antitoxin was used—the sixth day of the disease. Most authorities tell us we need not expect results at so late a date. But in this case there was probably no mixed infection, purely a case of diphtheritic infection, as laryngeal cases are freer from mixed infection than other cases.

The Klebs-Leofler bacillus seems to facilitate the development of the streptococcus and staphylococcus. Then we have a mixed infection. The diphtheria antitoxine will not overcome, or neutralize, the streptococci nor staphylococci. I presume it is this fact why so many recover when the antitoxin is used early (the recoveries being more than 90 per cent), and why the mortality is so high when the antitoxin is used late. Hence the importance of using it early.

The other cases in which I have used antitoxin, I used it on the second and third days; and I have seen the membrane readily dissolve and come away on the third and fourth days of the disease. In the few cases in which I have used it I have seen no untoward effects, and have had no paralysis. I, for one, am a warm advocate of the antitoxin treatment, and I think the medical profession to-day owe a hatlift and a reverential bow to those great men of science, such as Klebs, Leofler, Behring, and others.

THE IMPORTANCE OF A THOROUGH KNOWLEDGE OF BIOLOGY, BACTERIOLOGY AND THE CIRCULATION OF THE BLOOD FOR THE SUCCESSFUL APPLICATION OF SERUM THERAPY.

BY J. C. GRADY, M.D., KENLY, N. C.

Mr. President and Gentlemen of the North Carolina Medical Society:

The subject I have selected for my paper is supposedly a physiological one—the study of the circulation of the blood, biology and bacteriology, and their relation to serum theraphy —but should I digress somewhat from the letter of my text to contiguous subjects, I beg your pardon and kind indulgence in advance, while I attempt to rehash this old and threadbare subject, "Circulation of the Blood," that is so inseparably connected with *bacteriology and serum therapy.* I do not expect to be able to advance any new ideas along these lines, but if I can succeed in provoking a discussion of the subject then the object of my paper will be attained. The uses of the circulating blood may be summarized thus: It is a medium for the reception and storing of matter, that is, oxygen and digested food materials from the outer world for convenience to all parts of the body. It is also a source from which all the various tissues of the body may take the materials necessary for their nutrition and maintenance, and whence the secreting organs get the constituents of their various secretions. It is also a medium for the absorption of deleterious or refuse matters from the various tissues and their conveyance to the eliminating organs for their expulsion lest the system become by auto-intoxication her own destroyer.

It seems to me that a thorough and concise knowledge of the chemical constituents, biological elements, physiological and opsonic functions of the blood, together with its course and manner of travel over the system is absolutely *indispen-*

sable and merits our most painstaking study and consideration, if we would elucidate the mysteries and solve the problems of serum therapy and understand the important role the circulation plays in physiological and pathological processes. As you know, for the last few years there has been a great tidal wave of *chemical* and *bacteriological* research sweeping over this country and Europe. The human blood has been subjected to an endless variety of the most critical and searching tests, and this bacteriological crusade has put scientists and medical men everywhere on the alert hunting for a more satisfactory etiology and a more dependable treatment for the ills that afflict humanity. Medical and scientific men have been standing with microscope and chemical retort in hand striving to recognize and capture the baneful micro-organism or materies morbi that fosters disease and engenders death, and while as yet the goal has not been attained many new and startling truths have been evolved, many false and erroneous theories exploded, and many valuable improvements added to our rapidly increasing knowledge of bacteriology and serum therapy. Many of these innovations and improvements are things *too* that only a short while ago would have been considered unreasonable and visionary in the extreme, if not downright medical heresies. Conspicuous among these may be mentioned *Wright's Opsonic Theory* of injecting into the blood certain specific bacterins or serums that will so stimulate phagocytosis or the opsonic power of the white blood cells that they will become little corpuscular cannibals that will destroy and drive out every disease germ in sight and render the system absolutely sterile and immune against them.

So you see how essential it has become in these days of change and rapid scientific *thought* and *discovery* that physicians should keep themselves thoroughly informed on all physiological and biological subjects, and especially those that pertain to the circulation of the blood, bacteriology and its most powerful ally, serum therapy. The blood being the principal medium through which and into which the various

bacteria toxins and other poisons must enter the system and find lodgment preparatory to beginning their nefarious work of tissue poisoning and destruction, we should endeavor to learn some plan of preventing their entrance, of combating their presence and offsetting their methods of proliferation and development. We need to study their individual characteristics and learn their haunts and habits that we may be able with our antitoxins and blood serums to break into their strongholds, tear down their fortifications, and drive them from their intrenchments in the human system, and at some time in the near future we expect to be able to do this in almost every case of germ infection by the application of appropriate bacterial serums just as we now do by inoculation with vaccine virus to destroy or counteract that certain pabulum toxin or what not in the blood that feeds the germ of smallpox. Now, you would hardly expect a man to recognize a pathological condition in contra-distinction to the physiological one, if he were unfamiliar with the physiological. Therefore, in order to understand and fully comprehend serum therapy, one must familiarize himself with the different influences and agencies that conspire to bring about its peculiar manner of action; hence the importance of physicians keeping themselves at all times thoroughly informed on the circulation of the blood and its normal physiological functions, together with a corresponding knowledge of bacteriology and pathology, as an aid to a correct understanding of *disease* and the application of the serum treatment.

Now, inasmuch as the food after digestion becomes absorbed by the lacteals and lymphatics and is carried by the portal or lesser circulation directly to the liver, the blood to that extent becomes an accessory of the digestive process for the ultimate purpose of nutrition and tissue building, which process is accomplished by the food elements being conveyed to the different parts of the body and tissues by the circulating blood current.

Here we see what an important part the circulation plays as a carrier and the power it has and may exercise in the inoculation and spread of disease germs through the human system. Should they enter the system by the stomach, they are carried by the portal circulation to the liver and systemic circulation through which not only materials for repair are conveyed but disease germs and curative agents as well, by being taken up by ingestion and absorption along with the food and carried through the portal circulation to the systemic circulation and tissues at large.

So we see while the portal circulation is primarily a carrier of nutrition, it may also become the purveyor of deadly disease germs or be utilized for the better purpose of conveying curative agents in the form of antitoxins. Therefore it is this phase or circulation that we wish to study and strive to better understand and learn to more frequently utilize as a carrier of antitoxins and medicaments to the diseased tissues which, in combination with the ingested and digested food elements, are transported directly to the liver.

Leaving the liver it then goes to the right side of the heart with its normal constituents and toxins or antitoxins, thence to the lungs, performing again the same office, and in addition giving off some of its poisonous gases for oxygen. Thence it goes to the left side of the heart where, together with its death-dealing toxins or its life-giving nutriment and medicaments, it is poured into the general systemic or arterial circulation, either to poison or to purify the whole life-giving stream. So you can easily see how bacteria and disease germs and their antagonistic serums, whether entering through peripheral lesions or by ingestion and absorption, can be rapidly assimilated and disseminated by the simple and normal process of the circulation of the blood, and how poisonous germs or medicaments that may enter or become injected into the circulating fluid, either from within or without may easily gain access to the cells and tissues of the entire body.

Ofttimes the tissues and cells of the body become so weakened and overpowered by toxins and disease germs that nature's unassisted forces are unable to properly police the system until her diminished and impaired opsonins are replenished and rendered adequate to the task of driving out these hordes of invading microbes that have entered it and caused nature's powers to be overthrown and the energy of her immunizing and opsonic forces to be lost; then it is that we may be able by an intelligent understanding of the blood and circulatory apparatus and the vulnerable points of microbic life, by the use of hypodermic or intravenous medications and those which can be administered by ingestion reach and counteract or neutralize these invading toxins, ptomaines and other poisons before they become fully established in the system.

For, as we have already seen, medicaments as well as poisonous germs can be rapidly taken up by absorption from the digestive tract and passed along with the ingested and digested food to the portal circulation, and thence to the general circulation of the entire body, either to the restoration and preservation of its health-giving functions or to the poisoning of the tissues and the destruction of vital processes. So you can readily see how the germs of anthrax, syphilis, pellagra, tuberculosis, typhoid fever, the pneumococcus, the streptococcus and all that horde of nameless disease germs, after gaining entrance to the circulation, may rapidly disseminate themselves throughout the body.

Now, when we remember that the blood makes a complete circuit of the whole body every twenty to thirty seconds, then we can begin to appreciate to some extent the danger and power of the blood current as a germ-carrier and also obtain some idea of its importance as a disseminator of curative serums when injected into its current to stimulate its opsonic forces to resist disease and keep our bodies to the standard of health. This process will be accomplished in direct ratio to the opsonic index of the blood cells, and in proportion as

the tissues receive and contain a normal and sufficient supply of healthy blood in every part of her vessels and circulatory apparatus.

In this way the requirements for the health of the organism will be met and the whole scheme of life and health will resolve itself into the one condition, that we keep the circulation of the blood through the different parts of the body continually active and the opsonins in the blood up to the normal standard of their working capacity.

Whereas, should we fail to do this the circulation will at once become impaired and sluggish, its vital functions altered, its opsonic powers diminished and inefficient to the dangerous extent that we must immediately multiply physiologically, artificially or otherwise, these deficient opsonins, by the injection into the blood of appropriate bacterial serums, to the end and in such quantities that they will accelerate the action of the heart and circulation and restore to nature her lost physiological balance, and enable her to drive out and resist these invading toxins, preserve, maintain and perpetuate the health, life and well-being of the organism against the malign and deadly influence of the elusive microbe.

Ever since the day Mayerhofer isolated the streptococcus pyogenes from the blood of a dead puerperal woman, and Pasteur produced living cultures of the same and demonstrated it to be the principal cause of puerperal sepsis, it has been the dream of the profession to produce a serum with which the poisoned stream of a woman's blood can in some way be reached either by direct injection into the blood or by ingestion and absorption through the stomach. I believe that Mulford and other makers of antitoxins and bacterins are experimenting in the right direction, and who knows ere another decade shall pass but that we shall make even greater conquests over this terrible scourge with blood serums and bacterins than we have in the past with cleanliness and antisepsis until the horrors of the puerperal state shall become a byword of the past?

I believe that right along this line of serum therapy we have the richest unexplored field of medical science, and it devolves upon us as physicians to develop it to the end that we must familiarize ourselves with and take advantage of every agency and circumstance that bears upon it, or that will in any wise aid us in our undertaking, whether it be the circulation of the blood, chemistry, bacteriology, pathology, or any other closely allied subject. We want to study the hematolytic as well as the antitoxic action of bacterial cultures on the human blood, since there is unquestionably a significant relation between them not yet thoroughly understood. We want to obtain a more definite knowledge of the powers and functions of the anti-bodies found in blood serum and get a better working knowledge of the germicidal properties of the normal circulating blood in order that we may gain a clearer insight into the combining and resisting powers of healthy human serum.

We have already learned that there is great variation in the capacity of different normal systems for appropriating and assimilating immunity-giving serums. And we would also like to understand the manner by which the babe appropriates from the mother the immune bodies in the milk, and why it is that when nature-furnished nutriment is supplanted and artificially prepared food substituted so many infants wither and die like tender grass before a killing frost. By the acquisition of just this one item of knowledge we may be enabled to wonderfully lower the high mortality rate among bottle-fed infants. We want to look in at the open door that leads to a knowledge and explanation of the normal activity that controls cell multiplication and the process which occurs in the circulating blood called autolysis or self-digestion of inflammatory exudates, and try to understand how the production of these agents or ferments is brought about and controlled by the system. In short, we want to study the circulation of the blood in all of its relations to serum therapy, and serum therapy in all its relations

to the circulating blood because the two are so closely related, interwoven and interdependent that to understand the one we must necessarily understand the other, and the acquisition of a comprehensive knowledge of both will wonderfully aid us in grasping the thousand and one intricate and puzling clinical phenomena connected with the blood and serum therapy.

NORMAL SALT SOLUTION: ITS USES AND METHODS OF ADMINISTRATION.

BY C. A. WOODARD, M.D., DURHAM, N. C.

In private practice normal salt solution is not so widely used, but in hospitals it is one of the chief and most frequently used agents. This variance is probably due to the fact that in hospitals the requisite solutions and apparatus are always on hand and a nurse or resident ready to institute the procedure, while in private practice frequently none of these is available; hence the habit of the physician of resorting to various other drugs and measures to the comparative exclusion of the procedures which constitute the subject of this paper.

Normal salt solution is a six-tenths of one per cent solution of sodium chloride in water. Its alkalinity is of the same degree as that of the blood, hence its name. When introduced into the tissues, a vein, or the bowel, no osmotic interchange takes place, which is, of course, due to the equilibrium of the alkalinity of the solution and the blood; or, in other words, the equlibrium of osmotic pressure.

The important effects of salt solution when administered by one of the methods to be mentioned are to add fluid to the body, to stimulate the circulatory apparatus, to increase renal activity and perspiration and to dilute whatever poisons may be circulating in the blood.

The addition of fluid to the body is indicated in such conditions as severe hemorrhage, severe diarrhœas, as in cholera and some cases of typhoid fever; in shock, in which the patient becomes exsanguinated as it were in his own veins; and in conditions in which the blood is charged with poisons due to improper excretion, faulty metabolism or the activities of bacteria.

By the addition of a quantity of innocuous fluid to blood impregnated with poisons the strength of the poisons is di-

minished by dilution; and, by the increased perspiration and renal secretion, they are more rapidly eliminated.

Of the procedures I shall mention as methods of administration enteroclysis is the simplest and the one most easily and conveniently used. Nothing more is needed than an ordinary fountain syringe, a rectal tube and the salt and water. Sometimes a return flow tube is used; but this is a refinement and not essential. The solution should be sterile and only a few degrees above the body temperature, as high temperature may excite peristalsis and induce the expulsion of the solution.

The patient is placed in the right latero-prone position with the hips elevated on a pillow and the knees flexed, or the patient may lie in the dorsal position. The solution having been placed in the bag of the syringe, and the tube lubricated, the bag is elevated from two to three feet and the flow of the solution allowed to begin in order to displace all air from the tube. The tube is pinched to stop the flow and is carefully introduced into the bowel beyond the flexure of the sigmoid. After the tube is introduced into the rectum its further introduction may be facilitated by relaxing the pressure on the tube and allowing the flow to begin. This flow of the fluid distends the rectum and permits the rectal tube to be gradually pushed further in. As soon as the bag is empty the tube is gently withdrawn and the patient kept quiet for a few minutes to aid the retention of the solution. Quantities of from a pint to a quart are generally administered. But, if irrigation of the bowel is intended, an unlimited quantity may be used, as the fluid finds it way out by the sides of the tube or through the return flow, if a tube of that variety be used. A Kelly pad or some substitute must be used when irrigation is done, so that the returned fluid may drain into some suitable receptacle.

Hypodermoclysis comes next in point of ease of administration. This requires much more care in technique and is best not attempted unless it can be done under thorough

aseptic precautions. A fountain syringe may be used for this, though a glass irrigator jar is preferable. The other things needed are a hypodermoclysis needle or an ordinary aspirating needle, solutions for sterilizing the skin, and collodion and cotton for sealing up the little wound. It is highly important that everything used, including the operator's hands, be sterilized, and particularly the solution.

It is desired to introduce the solution into the loose cellular tissues beneath the skin; hence the points of election for the puncture are the abdomen, the axillæ, under the breasts, or the inner aspect of the thighs. The region in which the puncture is to be made is thoroughly sterilized and a sterile towel laid over the part to protect it until the other things are ready. The solution is placed in the bag of the syringe or irrigator jar and the vessel stopped with sterile cotton. The temperature should not be above 104 degrees or 105 degrees F. The needle is connected with the tubing and a little of the fluid allowed to flow to expel the air and warm up the tube. Then the needle is introduced through the skin into the cellular tissues beneath and the flow started again. The bag is elevated from two to four feet above the level of the patient. If the needle be a large one a low elevation is sufficient, but if it be a small one it is necessary to elevate the bag fully four feet to overcome the resistance of the small caliber of the needle. It is best not to introduce the fluid too rapidly. Hare states that one dram to each pound of the patient's weight in fifteen minutes is fast enough. When one point seems sufficiently distended the needle may be withdrawn and introduced elsewhere. The quantity of fluid used will depend upon existing conditions and the results desired. Ordinarily a pint or quart is used, but often it is well to watch the pulse and continue the flow until the pulse improves, if stimulation is desired. The procedure may be repeated every four, six or eight hours, as indicated. As suggested above the little wound is sealed with cotton and collodion.

The most tedious method to be mentioned is intravenous infusion. If careful technique be required for hypodermoclysis even more care should be exercised in this case, for here the fluid is introduced not into the bowel, where it is absorbed through the intestinal wall, nor into the cellular tissues beneath the skin, where it is possible for an infection or solid body to remain local, or air to be harmlessly disposed of, but directly into a vein, into the blood current which flows to the heart, thence to the lungs, brain and other important organs. An infection thus introduced may produce a phlebitis, a general septicæmia or pyæmia, or a solid body (which becomes an embolus when thrown into the blood stream) may be carried to the lung or other important organ in the body and produce an infarction, and perhaps abscess; or to the brain, producing the same condition or even paralysis. An air embolus thus introduced may reach the heart in sufficient bulk to produce sudden death, though this is unlikely. Prictically, however, none of these is likely to occur if one is reasonably careful in technique.

The apparatus necessary is the same as for hypodermoclysis, except that a specially designed blunt canula with a shoulder near its tip is used instead of a sharp needle. The median basilic or cephalic vein is selected, though some prefer to use a vein of the leg. After the skin has been sterilized a bandage is applied about the arm, above the point to be opened, to constrict the venous circulation and cause the vein to stand out prominently. The skin over the selected vein is incised with a scalpel for a distance of about an inch, the fat divided down to the sheath of the vein, and the sheath dissected free for half an inch. A ligature is applied about the vein at the lower end of the incision. This together with the bandage around the arm keeps the vein distended for the phlebotomy. A ligature is applied about the vein at the upper end of the incision and left untied. A small incision is made into the vein and the canula introduced into the opening; the canula is now pushed in and the ligature tied about the vein, including the canula within its grasp. The bandage is

removed from the arm and the solution allowed to flow. The bag or irrigator jar should be about one or two feet above the patient and the fluid allowed to flow slowly. An hour should be consumed in the administration of a quart, for in intravenous infusion the fluid goes instantly into the circulation and is not delayed for absorption as in hypodermoclysis.

Before introducing the canula the fluid should be allowed to flow in order to displace the air, and if the canula be dipped into salt solution before its introduction blood will not coagulate on its tip as it is introduced.

When as much fluid as is desired has been infused the canula is removed, the ligature tied, and the little wound stitched up and aseptically dressed.

As the fluid flows into the vein the pulse and respiration improve and the fever, if present, is usually somewhat reduced. However, in from two to thirty minutes the patient enters the critical stage. There may be a chill and strong, rapid pulse and, later, flushing of the face, followed by a profuse sweat. The respiration may become labored and there may be increased urinary flow, and even escape of fluid by the bowel. But after a few hours these symptoms disappear and the patient gradually improves.

Some of the conditions in which these methods may be used may now be mentioned:

It is well known that in typhoid fever the free use of water is a valuable aid to the treatment. The administration of water by mouth may be reinforced by enteroclysis, and, in severe cases, hypodermoclysis. It may be repeated three or four times a day with benefit. In pneumonia, especially those cases which show profound toxæmia, the same steps may be taken. In diabetic coma the patient is certainly sometimes restored to at least temporary consciousness. In uræmia, or acute suppression of the urine, there is no better adjunct to the treatment than the use of these measures. In desperate cases continuous flushing of the bowel, using unlimited quantities of salt solution, may be used, and sometimes undoubtedly proves life-saving.

Sometimes in uræmic conditions it is advisable to withdraw fifteen or twenty ounces of blood before using intravenous infusion. Caille states that enteroclysis will produce improvement in anæmia even when iron and arsenic, etc., are excluded.

These measures may be used in any of the acute infectious diseases, as mentioned in typhoid fever, and particularly are they of value when for any reason the stomach disbars medication.

In dysentery and the various diarrhœas in adults and in children nothing is a better part of the treatment than washing out the bowel, thereby removing undigested food and other irritating and fermenting matter, and retarding to some degree the formation of gas. The idea in these cases is not, of course, the systemic effect after absorption, but the local cleansing effect on the bowel.

In intestinal obstruction, due to intussusception or impaction of fæces, it is feasible to try enteroclysis, using high pressure.

In cases in which it is desired to add heat to the body enteroclysis may be resorted to. The solution should be as hot as 110 degrees F. at least.

In heat-stroke the same method may be used, except that in this condition the solution used is cold instead of warm. A temperature as low as 65 degrees F. is compatible with safety. Marked reduction of pulse follows.

In profound shock and severe hemorrhage salt solution is one of the most valuable agents, if not the most valuable agent, at our command. In very profound cases intravenous is best; in milder cases, hypodermoclysis; and in very mild cases, enteroclysis. When the circulation is very weak and the blood pressure low it may be that the capillaries will not take up the fluid under the skin. However, if enteroclysis be used first, the circulation will be stimulated sufficiently to bring about absorption under the skin.

The injection of salt solution just before chloroform anesthesia has been used with considerable benefit to the patient.

A large quantity is used and it is claimed that the patient can stand more chloroform, comes out from under the influence of the drug more quickly, suffers less from the after effects, and recovers more rapidly than when the injections are not made.

Circulatory depression due to any of the above-mentioned conditions may be treated by these methods, but, of course, organic heart disease is not amenable, and in œdematous and ascitic conditions they are obviously contra-indicated.

The most brilliant results from the use of normal salt solution, however, have been obtained in the treatment of suppurative peritonitis by Murphy's slow method of proctoclysis, together with the exaggerated Fowler position. Without going into the history of the development of the method, it will suffice to say that it has been demonstrated that the upper or diaphragmatic region of the peritoneum has greater and more rapidly absorbing power than that of the lower or pelvic region. Hence, if a patient be propped up in bed in a semi-erect position, or better, according to Dr. Stuart McGuire, if the head of the bed be markedly elevated, the toxic fluid in the abdominal cavity will be determined by gravity away from the upper region to the lower, where absorption is less rapid.

It has also been demonstrated that fluid introduced into the rectum will find its way, by antiperistalsis, up the colon to the cæcum, and there be absorbed. By this means the relatively dehydrated vessels become filled with fluid and the peritoneum becomes a secreting surface rather than an absorbing one. So, if proper incisions be made and drainage tubes introduced (it is not in my province to go into the steps of the operation) instead of the peritoneum absorbing the toxic material the current of osmosis is reversed, the blood serum is secreted into the peritoneal cavity and the toxic matter washed out through the drainage tubes.

The procedure may be instituted as follows: An ordinary fountain syringe with the short nozzle may be used. It is sufficient to introduce the nozzle just within the rectum as

the normal tone of the sphincter is sufficient to hold it in place. The idea is to introduce the solution only as rapidly as it can be absorbed by the vessels and not rapidly enough for it to accumulate in the bowel and act as an enema. To do this it is necessary for the flow to be very slow, or about a dram a minute. It was formerly difficult to regulate the flow, but a device has recently been suggested which obviates the difficulty: Near the bag the rubber tubing is divided. Into the proximal end a piece of glass tubing is introduced, the lower end of which has been drawn out into the shape of a medicine dropper. Into the distal end is introduced the larger end of a smaller glass tube of the same shape. A medicine dropper itself will do for this. If the distal and smaller tube (or medicine dropper) be introduced into upper end of the proximal or larger tube and sealed with wax, or washered with a small section of rubber tubing, the device is complete. The result is obvious. The fluid is in full view as it flows through the device. Now, if a forceps be applied above this it is manifest that one can regulate the rate so that the solution merely drops through. By counting the number of drops per minute one can calculate the exact quantity of solution that is introduced per minute or hour. If it is found that the solution is passing in more rapidly than it can be absorbed, and is, therefore, accumulating in the bowel and acting as an enema, the nozzle may be withdrawn until the rectum becomes quiet and then reintroduced. This procedure may be continued for days. Owing to the slow flow it is necessary that the fluid in the bag be kept very hot else it will be cold by the time it reaches the rectum.

The adoption of this method, together with the exaggerated Fowler position, after suitable surgical procedure, has converted suppurative peritonitis from one of the most fatal diseases to one with a comparatively low mortality rate. In December last Dr. Stuart McGuire had used it in eighteen cases with but one death. Much the same results are being obtained by numerous surgeons throughout the country.

VENESECTION: ITS INDICATIONS AND USES AS A THERAPEUTIC AGENT.

BY W. M. LYDAY, M.D., PENROSE, N. C.

General bloodletting from the general circulation, usually by opening a vein of considerable size, sometimes by opening an artery or the abstraction of blood from the capillaries and smaller vessels of congested or inflamed areas by leeches, scarification and wet-cupping.

Venesection is a therapeutic measure of the greatest utility in properly selected cases, and, like many another agent of great usefulness has, by abuse, been caused to fall in undeserved disrepute.

The present paper will, therefore, chiefly be devoted to general bleeding. This art, practiced for centuries more or less universally, has of late years in this country fallen into disfavor. Much discussion has been raised as to the grounds for so great a difference.

It has been attributed (1) to the type of disease having undergone a change: (2) to mere fashion; (3) to a better knowledge of the nature of disease, teaching us that its processes were of a depressing or lowering character which were to be overcome by the more general use of drugs which control circulation, as well as of stimulant and support.

The probable cause which contributed most to the change was that venesection was a universal panacea for all diseases, especially of those diseases that were characterized by extreme depression, as epidemic cholera, typhoid fever, influenza, malignant dysentery. In such diseases if antiphlogistic measures were adopted they proved failures and taught physicians that bloodletting was not the universal panacea it was supposed to be. By degrees it ceased to be practiced as it used to be.

A new generation which knew not of the past has sprung up and, as in all reactionary movements, the practice has almost ceased to be a therapeutic measure. It is almost that

in either extreme there is an evil and that we may have recourse in certain cases to abstraction of blood with great benefit, which formerly led to its abuse.

It will be well to consider the subject at some length and under the following heads:

1. The effect of moderate losses of blood on the healthy economy.

2. The value of bleeding as a remedy in disease, with the indications for its employment in various affections.

First, then, we have to consider the effects of moderate losses of blood upon the healthy economy. Upon this point we have abundant evidence, for the custom of regularly bleeding healthy people had reached such a point during the early part of the past century that in country districts it became a habit for adults to be bled as regularly as they went to market. No better testimony regarding the effects of this practice could be adduced than that of Sir James Paget, who says, when referring to these customary venesections, that "I can regard those as a series of venesections fairly performed for the determination of what is the influence of the removal of blood up to the point of syncope upon a comparatively healthy person; I think I can say surely that not one of these persons suffered harm." To this might be added other and abundant testimony to the harmlessness of moderate venesections on the healthy economy.

The effect of the operation on the blood is interesting, for after bleeding the fluids of the tissue are rapidly taken into the blood vessels to restore the diminished volume of the blood, thus increasing absorption and relieving congestion, leaving the quantity the same as before, and the quality in a more dilute form.

Indication and Uses.

Broadly stated it may be said that bleeding is indicated when there is evidence of marked over-distention, either of the arterial or of the venous system. In either case the re-

sult will be cardiac distention: in the former case of the left, and in the latter of the right chambers of the heart. In such conditions general bleeding restores the lost equilibrium of the vascular system and relieves the heart and the other parts concerned in the circulation of the blood.

It may in general be said to be diminution of the circulatory excitement, relief of congestion, inflammation and pain; lessening of nervous irritability, production of muscular relaxation and the removal of poisons contained in the blood. When these conditions are associated with a full and tense pulse, particularly when accompanied by evidence of pulmonary engorgement and an overworked and failing right ventrical, by signs of cerebral congestion and venous stasis.

Pneumonia.—Bloodletting in pneumonia is indicated in healthy patients suffering from uncomplicated acute sthenic pneumonia. If they happen to be seen early enough it relieves pain, aborts fever; and if it does not arrest the disease it certainly appears to lessen its duration. It may also be called for when there is severe pain and cardiac embarrassment.

Excruciating pain radiating through the chest denotes involvement of both lungs, and a bad sign during the first and second stages, is more successfully treated by copious venesection than by any other remedy.

In intense dyspnœa with profuse, frothy sputa, moist rales in the uninflamed parts of the lungs, sudden sinking, drowsiness, coldness of the skin are signs of carbonic acid poisoning, and great danger of beginning œdema, our best remedy is free bloodletting.

To illustrate the good effects of venesection I will give a case: Was called to S. S. O., whose daughter had recently died of pneumonia, and found him with excruciating pains radiating through the chest, great dyspnœa, profuse, frothy sputa, moist rales all through both lungs; pulse 136; temper-

ature 104; respiration 38; skin cold; extensive hyperæmia and œdema.

Prognosis.—Will die within thirty-six hours.

Treatment.—Opened the median basilic vein and bled until there was a decided impression made on the system, which required about sixteen ounces. Effect in one hour: pain and dyspnœa relieved; pulse 120; temperature 102; respiration 24; skin moist and warm. Next morning—rested well during the night—temperature normal; pulse normal; pain gone. Made an uninterrupted recovery without other medication.

Numbness of limbs, slight convulsions, coma, somnolence are signs of œdema of the brain, and venesection is our most reliable therapeutic agent.

In the course of pneumonia or pleurisy, when intense dyspnœa develops with moist rales, serous sputa, feeling of fullness and compression, causing fear of death, heart beats visibly, the radial and carotid arteries, extensive hyperæmia and œdema, the danger is imminent unless relieved by bloodletting to effect.

For threatened apoplexy regular copious venesections will be our best remedy, not only obviating the tendency to death, but has saved the patient's life. The treatment of threatened apoplexy due to hypertrophy of the heart requires prompt venesection.

Puerperal Convulsions.

This nerve-urying condition had formerly been viewed with well-deserved dread, for the reason that it was largely incurable. In fact, it is within the limitation of exact truth to say that there was a time, by no means remote, when what few cures did occur should properly be credited to dame nature herself rather than to the attending physician.

Though still at sea concerning the real cause of the convulsive seizures, experience has taught us a reliable treatment. Our knowledge of the supposed cause has also improved enough to make it seem that the condition is one of

auto-infection, involving either the liver or kidneys, or both, for both have been found diseased post mortem in these cases.

The general indications for the preventive treatment in these cases may, therefore, be said to consist in elimination. In the robust patients copious venesections, followed by diuretics and aperients.

For the actual convulsion, either before, during or after labor, there exists the double indication calling for the rapid elimination of the toxicant; and this is effected most successfully by copious venesection. This is a specially desirable method in the full-blooded, though also applicable in others. The object is to relieve blood pressure, produce relaxation and abstract a certain amount of the toxins from the blood itself. Bleed to effect sufficient to control circulation.

Acute nephritis, not complicated by pregnancy, in severely acute cases of nephritis, active congestion may cause almost complete suppression of the urine, aching in the back and loins, an usually pronounced uræmia. Venesection is our most efficacious means of relieving this condition. It relieves congestion and depletes the kidneys, and renders the case more easily and successfully managed.

To illustrate: was called to Mr. P., age forty-two. Had been sick forty-eight hours. Found temperature 103 1-2, pulse 120; great dyspnœa; urine very scant, almost complete suppression, highly albuminous and bloody; pain in back, loins and severe headache, beginning of general anasarca; pronounced uræmia.

Treatment.—Copious venesection, hot fomentation from shoulders to loins, saline purgatives and saline diuretics. In six hours temperature 100, pulse 80; skin moist; head relieved. Next morning symptoms all relieved, free flow of urine. Made an uninterrupted recovery without further treatment.

I believe that one of the principal reasons why bloodletting is not more commonly employed is owing to the lack of actual

experience among teachers and the enormous amount of medical literature which is published against the employment of this most useful and certain remedy in suitable cases.

I believe firmly, and such has been my personal experience, that nothing can take the place of bloodletting at the commencement of nearly all inflammatory affections in sthenic, plethoric individuals. In pleuro-pneumonia it is especially indicated.

I hope that within the next few years there will be found many more medical men carrying lancets, both clean and sharp, ready for emergencies.

THERAPEUTICS AN ART.

BY W. H. BOONE, M.D., MORRISVILLE, N. C.

No other department of medical science is more important than that of therapeutics. It not only offers a correction for pathological phenomena but a restoration from morbid anatomy. It maintains physiological function and makes the execution of hygienic measures possible. The excuse offered for presenting this paper, therefore, is to accuse the profession of therapeutic inefficiency, and to discuss lines of improvement.

In the rapid progress of the science of medicine during the last few decades therapy has not kept pace with other branches. There was a time in medical history, however, when it held first place, and a medical adept meant a therapeutic expert; but now it rather means a skillful pathologist, diagnostician, surgeon or some other necessary appendage to what should be the real branch. It is true that specifics have been discovered, certain serums proven to have wonderful antitoxic and immunizing power, and many drugs purified and standardized, all of which proclaim advancement; but because of wide physiological variations and very wide pathological deviations, coupled often with unreliable drugs, it follows that therapy is an art requiring skillful adaptation, and can not be reduced to an exact science of mathematical quantities.

The reduction to correct exactness of the principles of other branches in the field of medicine has caused the profession to a certain degree to lose faith in the efficacy of drugs to accomplish definite results, and is therefore timid in its administration and seeks to dodge by throwing the responsibility of all failures upon the Lord, at the same time assuming credit for all the Lord's achievements in spite of his interference.

The physician is like a soldier who meets the enemy, shoots at random and hopes for victory. The gun is all right,

the enemy is in view, but he is not an artistic marksman and looks in faith to Mars, the God of War, rather than his gun for success. Nature, the doctor's God, has great compassion both for the doctor and his patient; covering the mistakes of the one and healing the ills of the other, in spite of the drugs shot at random to the contrary. It is a cause for professional shame that we abuse the goodness of this amicable friend by being careless, indifferent and skeptical; careless in looking for the actual cause of physiological distraction, indifferent to prescribing directly and definitely to the removal of such distraction, and skeptical as to results to be obtained by drugs other than palliative in correcting pathological processes and restoring normal function.

To substantiate this accusation I submit as testimony the prescription files of any drug store in North Carolina; I submit the lists of any proprietary drug-mixing house in America; I submit the bewildering therapeutic opinions of any representative medical assembly on record. The submission of further testimony is considered unnecessary accumulation, and we ask you first to critically inspect the prescription file. Here you will find chemical incompatibles, physiological antagonists, and a greater number you may class in the shotgun variety; the first shows a lack of the chemical knowledge of drugs, the second proves a deficient understanding of their physiological action, and the third asserts both a diagnostic incapacity and a therapeutic inability. The manufacturing pharmacists or drug-mixing people are both a blessing and a curse to the profession. A blessing in that they manufacture from nature's crude storehouse clean, pure extracts, etc., indispensable in modern therapy; but a curse in that they take the initiative in compounding and mixing formulæ and urging their use by the profession, claiming practical merit that is only theoretical.

They advertise their stuff like patent medicine concerns, and seduce the therapeutic artist to befuddle himself with quackery, to desist from individual experimentation and observation and to become a rusty scale upon the polished art.

The therapeutic opinions of a representative body of physicians like this which I submit, without much comment, is alone sufficient evidence to warrant the case, for we are all agreed on bacteriology, chemistry, pathology, etc., almost absolutely; but how many of us can be found to agree on any one point touching therapy?

Gentlemen, have you ever thought what an easy thing it is to pour a decoction into the belly of a fellow, who is racked with pain, distressed with nausea or prostrate with exhaustion? He appeals to a physician, who in the goodness of his heart yearns to appease the anguish of both mind and body; or it may be, to air his own medical alertness, gives a dose, to be doing something, that satisfies the anxious friends, while the doctor looks the look of confidence and awaits a result in hope, conscious of having imperfectly fulfilled the mission for which he was summoned. The surgeon the physician looks upon as a sort of superior, with a steady nerve, a dextrous hand, and unqualified diagnostic ability, capable of bearing responsibility and of assuming charge of complex maladies, such as therapeutic indefiniteness has failed to relieve.

It is a Godsend that we have the surgeon among us, and we hail him with honor and brotherly love. It is because of the recognized success of surgery and therapeutic inaccuracy that the young doctor, zealous for honor and recognition, manifests a thirst for gore at the edge of his scalpel. Let us glory in the steady march of surgery and the life-saving methods it offers, but let us not lose faith in drugs—for what the instrument case is to the surgeon the medicine case is to the physician—only more so. In my humble estimation the doctor who gathers evidence through careful examination passes judgment upon the pathology existing and prescribes with simple definiteness to combat the malady, is the greatest master in the field of medicine. This master is more of an ideal than a reality, a mental picture of a possibility, a standard of efficiency to be sought after.

An optimistic view reveals a brighter day for medicine

when the pendulum of professional enthusiasm ticks the extreme in surgery and swings back to the art of therapy.

God made man, He made the disease-producing microbe that infects him, and He likewise stored in nature the remedy for his restoration. It is the task of the physician, therefore, to discover and prescribe remedies that will successfully combat the ailments of mankind. In the light of modern research aided by chemical and physiological laboratories, together with unlimited clinical material, the opportunity is afforded the physician to discriminate in the selection of remedies and to ascertain their uses and limitations. Having attained this ability, and also having skill to judge a distinct indication for their use, constitutes the art of therapy. First to discriminate in the selection of remedies is very important; there are so many new drugs upon the market to-day that it is impossible to test them all, notwithstanding there are physicians who pride themselves upon prescribing every new drug, in order to show themselves progressive. They have a lot of remedies, especially new remedies, for every disease. They have not yet, as some one has said, developed to the point of one drug for several diseases. It is necessary, however, to remember that while we have average data for nearly everything connected with the human being, we have to treat every patient individually. Therefore, while it is wise to select and depend upon a few drugs, knowing well their good and bad effects, yet it is expedient to have a well-selected reserve for irregularities and idiosyncrasies.

With repect to the use of drugs we will class them as symptomatic and causal. While it is very necessary to relieve a symptom that is endangering life, such as, for instance, alleviation of high fever, the soothing of distracted nerves, the stimulation of vital centers in case of depression, and the supplying of fluid to the heart after hemorrhage, yet it is poor therapy to prescribe promiscuously for every symptom that may arise. To prescribe for every symptom may count well with the laity who, probably, are induced to think the doctor is straining his ability in the patient's behalf and, by his per-

sistent energy, gain laurels that are sure to fade sooner or later, and praise, that to him, with his disappointed results, is as sounding brass and a tinkling cymbal. It is to be remembered that the symptoms are not the disease and that when the cause is removed the symptoms disappear.

The removal of the cause being a complex task requires the greatest skill, for each organ is in close sympathy with every other one, and due regard must be paid them all. To treat the liver independent of the rest of the body will fail of success, because the stomach, the bowels, the kidneys and other organs are functionally disturbed by its derangement.

An ideal therapeutist then would combine the use of symptomatic and causal remedies, not forgetting in his zeal to cure the disease, the welfare of the patient. The limitations of drugs in the art of therapy are determined by their physiological action in individual, pathological conditions. It must be remembered that the tabulated physiological effects of drugs in a large measure have been worked out on the lower animals and man in health. Especially is this true of the newer drugs. In view of this fact, it is not wise to expect results in diseased conditions by using average doses. There is but one way to know the effects of drugs and to expect results from their administration in a diseased individual, and that is by observation. The habit of prescribing the average dose as suggested by standard works of Materia Medica and Therapeutics, is largely accountable for the disappointing results which have fostered a skeptical sentiment regarding therapy. If a drug has the power to produce a certain effect and it fails when administered to do so and no untoward symptom arises, it is folly indeed to abandon it to try another; why not push it until the desired end is attained, observing closely for ill manifestations, remembering that—

> "Full many a shaft with purpose sent,
> Finds mark the archer little meant."

An illustration of this point is to be had from the giving of viratrum viride in a case of puerperal convulsions. Following the advice of a brother practitioner, we endeavored to reduce the pulse beat from 140 to 70 per min., being assured

that the convulsions would cease, 30 drops of the tincture for several successive doses every thirty minutes were required. Pulse was softened and reduced and kept so by an occasional addition of 20 drops; convulsions ceased and the patient recovered. We have had surprisingly good results from the tinct. of aconite in the onset of pneumonia, by giving it with a free hand to relieve a lung from congestion and engorgement by decreasing arterial resistance and cardiac force, thereby preventing hemorrhage into the air cells and consequent blood clot or consolidation. In several cases we have seen acute attacks of appendicitis relieved absolutely by the administration of four oz. of sweet oil every four hours, the idea being to lubricate the intestinal tract from os to anus and thereby relieve the strangulation.

> "Diseases desperate grown
> By desperate appliances are relieved
> Or not at all."

While cases *in extremis* require radical measures, conservatism is the best policy, for often simple remedies, in a simple way, for simple ailments, are better than a bombardment with more powerful drugs; but such simple simplicity as letting nature take her course when her course is bad, as it is in every diseased condition, will often assign a curable patient to an apartment beneath the sod.

Let it not be forgotten that mankind is both spiritual and material. That many are much more spiritual than material; therefore, to complete the art of therapy, the mental man must not be overlooked while treating the physical man. The balm of suggestion, the oil of confidence and the soothing of hopeful expectation are indispensable aids and can not be ignored.

We need not less of science but more of art. To know how to cure is the doctor's most valuable asset. Many funerals bring idleness into his office and tie crepe upon the door of his reputation; besides—

> "It is an awful thing, to see a human soul take flight,
> And leave but a pile of mother clay, to the physician, his respects to pay."

HYDRASTIS TREATMENT OF BRIGHT'S DISEASE.

BY FRANCIS DUFFY, M.D., NEW BERN, N C.

For at least twenty years I have been using hydrastis canadensis in cases of Bright's disease of the kidney and in some other diseases of the kidney or urinary tract, as the presence of albumin in the urine has been the signal or indication in a general way for the use of that remedy. The use of this remedy was not original with me so far as giving it a place in the catalogue of drugs used in Bright's disease is concerned, for in some of the old works on materia medica references to the drug may be seen in connection with Bright's disease, but only as in a catalogue of remedies that have been used in a given disease. The longer the list the more certain that no effectual remedy or satisfactory treatment has been found, so when I began to use this remedy it was only as an adjunct from which a possible advantage might be obtained. After a while I began to think it was useful in these cases and sought to know how much I might give with advantage and without danger. The preparation used was generally a fluid extract, preferably the alcoholic but often the aqueous. The white preparation I did not use, as that does not represent the drug. I soon began to give one drachm doses three or four times daily, having as an experiment taken two drachms myself with no unpleasant result. I would sometimes use as much as six drachms daily in bad cases.

My brother, Dr. Chas. Duffy, with whom I have been so long associated in the same office, has had some favorable results with the use of the remedy in albuminuric cases, and from him I got the valuable suggestion to use smaller and more frequent doses. My experiences have been very favorable in this connection, as I shall attempt to show by specific references to cases.

I have been asked repeatedly to write on this subject, but have hesitated to do so, largely because I had kept no accu-

rate data of cases, and further because claims of marked benefit or cures of Bright's disease by any medicine would be startling if they received respectful attention, and every statement would be challenged.

To meet these challenges or inquiries, I am well aware that the most accurate physical and laboratory examinations should be made and the most discriminating judgment used to ascertain as far as possible to what the albuminuria is ascribable in any given case which has been cured or benefited by the use of hydrastis.

I regret that as for the most of my experiences these details are lacking, and consequently this paper very unsatisfactory to myself.

Of the cases occurring in the earlier years of my experience, I can only say from memory that a number of cases of patients having albuminuria and other cases of kidney disease (in one case convulsions), apparently recovered under treatment by hydrastis. Some of these cases were dropsical. In some the duration of treatment was only a few weeks, in others requiring several years.

One case; male; age, 35 years; occupation, merchant, was under treatment over ten years. He bought pint bottles of fluid extract of hydrastis at a time, and he estimates that he has taken from half a pint to a pint a month, with occasional intermissions.

I examined this man for life insurance, and having tested his urine, passed favorably upon his application, and a policy was issued. About a month later I examined him for another company and found albumin in his urine, which condition was constant under repeated tests. He was then given the hydrastis treatment, but he continued in a run down, weak condition for at least a year, with constant albuminuria. Then there was complete absence of albumin, but with occasional recurrence as treatment was discontinued. During the last five years or more I have not found albumin in his urine. A test at the time of this writing shows none and he appears to be entirely well. He has had only the hydrastis treatment.

except as a simple purgative might be required or quinine for malaria.

Barthalow places hydrastis second to the cinchona preparations as an antiperiodic, but I have known malaria chills to occur while patients were regularly taking hydrastis, and while I do not think much of it as an antimalarial remedy, I have used it in cases of hemorrhagic fever, in some cases and in some stages of which it has seemed to be of value.

In my first experiences I used a number of remedies, such as Basham's mixture or some other preparation of iron, iodide of potash, digitalis, lithia, etc., plus hydrastis. Now I use hydrastis only, except perhaps some symptomatic remedy as a saline purgative or quinine for malaria or possibly iron for anæmia.

I use from twenty minims to thirty, usually every three hours, sometimes every two hours, sometimes at intervals of four hours, exclusive of the hours of sleep. Hygenic rules of course to be observed. Undue exposures and chilling of the surface to be avoided. Overexertion always increases the albumin. As a rule, no particular diet is enforced except to avoid overeating and especially of meats. Gluttony, especially as to albuminoids, is much more causative of the disease than excessive alcoholic drinking, which, however, is to be avoided, and which stands in causative relation to chronic intestinal nephritis. I have never gotten much satisfaction from milk diet as a treatment, but in moderation, it is quite advisable as a food to those with whom it agrees.

The copious drinking of mineral waters in connection with the hydrastis treatment appears to be exciting and harmful to the kidneys in some cases, one of which will be given. But I do not mean to deny the usefulness of minerals in a general way in connection with Bright's disease.

About the first effect of the hydrastis treatment is to decrease the excessive volume of urine in that class of cases in which this symptom prevails. It is well to find out by measure what quantity is secreted in the twenty-four hours before giving the hydrastis, then as it is given the quantity

of urine will usually begin to diminish, day by day, until it reaches the normal amount. I am not aware that the quantity of urine can be reduced by hydrastis below the normal quantity.

At first there may be the same relative quantity of albumin, the absolute amount being diminished in proportion to the reduction of the volume of the urine. Then in many cases, after a long or shorter time, all symptoms disappear, sometimes to return, frequently not so.

I do not wish to be too enthusiastic about this treatment, or to be understood as saying all cases will recover thereby. Of course such is not the case.

I am now treating several patients with Bright's disease who are but little benefited by the treatment. They are cases of long standing, long undiscovered or long neglected. Some I seldom see and have but little knowledge of their treatment or condition. One of these now, confined to bed, I warned years ago, but he was indifferent until œdema and other symptoms compelled him to seek treatment. Hydrastis then seemed to benefit him, but in active employment and disposed to exert himself to the utmost, he was finally overcome, having besides general anasarca œdema of the lungs, with great difficulty of breathing, hypertrophic heart, with abnormal blood pressure and arterial sclerosis, was somnolent and had hallucinations.

For a time hydrastis was discontinued in this case and remedies used for the reduction of dropsy and relief of excessive blood pressure. This patient continues to live, is more comfortable and even hopeful, but it is only a question of time when he must succumb. He is now on a mixed treatment of hydrastis, calcium chloride and nux vomica, with saline laxatives as required.

Another case now under my care is one of such complications as to make it uncertain that the kidney trouble is entitled to first place in the morbid curriculum. A lady sixty years of age had been confined to her room and most of

the time in bed a year before I was called to see her. First examination of urine showed presence of a little albumin, for which no special treatment was offered. After several weeks the albumin was in greater quantity and microscope showed granular and hyaline casts. Hydrastis treatment was given and within a week every trace of albumin had disappeared. Microscope showed no cast present. Then the hydrastis was reduced to fifteen drops three times daily. After a few days the bare trace of albumin was again present in the urine. Under this meager dosage the urine in a few days more showed an increased quantity of albumin. Then fluid extract of hydrastis was ordered in half-drachm doses every three hours, but the patient was feeble and nauseated and failed to take the desired quantity. From day to day examinations of the urine have been made, but at no time has the urine been entirely free from albumin, though at the time of this writing Heller's test discovered but a bare trace. I am hopeful of a complete disappearance. The National Dispensatory states that in medicinal amounts, hydrastis has but little effect upon the vital functions, but in large amounts is exceedingly poisonous, and again explains that the dose of the fluid extract is from 5 to 10 minims. Under the separate description of the fluid extract larger doses are stated, but authoritative books do not give the dose the same, and in some places the tincture is rated at the same dose as the fluid extract. The entire drug contains hydrastine, berberine, canadin, and a volatile oil.

It seems to be an established fact that death may be caused by the drug, hydrastine being a dangerous constituent. I have prescribed that alkaloid, keeping within the narrow limits of the established dose, of from one-quarter to one-half grain. I can not say what results followed, or that a given result was on account of it. After having taken two drachm doses of the fluid extract myself experimentally and having no discomfort from it, I did not hesitate to give from a half drachm to a drachm to others, yet I recently knew of a pa-

tient who I think was mildly poisoned with it, the first symptom being an intolerance of the drug, which caused vomiting of the doses. Exceptionally patients have a disgust for the drug, saying it is the worst on earth. If I can not overcome that, I regard the fact as unfavorable to the patient and likely to affect the prognosis unfavorably. The acknowledged therapeutic application of this remedy is for mucous membranes. The epithelium becomes soaked in it, when enough is applied, and the taste and stain are not easily eradicated. That it is useful in such cases is common knowledge set forth in any therapeutic work. As the alkaloids are eliminated by the kidneys largely unchanged, it would seem rational that those organs might be beneficially influenced by the application. My own experience as related in part, however imperfectly, assures me that such is the case, but I have not found in literature that the profession is aware of that use of the drug. Taken as an example, the text-books on the practice of medicine, materia medica and therapeutics in the Johns Hopkins School of Medicine, Baltimore, do not mention the remedy in this connection.

The following case seems to illustrate the possible harmfulness of too much treatment. An elderly gentleman came to my office complaining of symptoms which I thought might be referable to his kidneys. On examination of his urine my suspicions were confirmed. He was in consternation when informed of his trouble. He was placed on the usual hydrastis treatment; no other drug or medicinal agent was used. He slowly improved until I assured him that there was no longer a trace of albumin in his urine. The drug was advised in diminished quantity and I saw no more of him for a while. Then he returned not feeling so well, and an examination showed a return of albumin. Investigation discovered no cause for the relapse, except that he had tried to make assurance doubly sure by supplementing my treatment with copious draughts of a mineral water, which he had ordered without my knowledge. I directed him to discontinue the mineral water and stick to the hydrastis. In a short time

albumin disappeared and has not, to my knowledge, returned. I have made several examinations of his urine.

One more will close my report of cases.

On the 9th day of April, 1908, a man came to my office for treatment. He is aged forty-nine years, six feet in height and weighs three hundred and thirty pounds. Breathing was labored and his legs very œdematous. Examination of urine showed copious albumin. Microscope showed hyaline and granular casts. Heart appeared to be normal. No stiffness of the arteries. No fever or other acute symptoms. He was placed on the hydrastis treatment exclusively, except that some ipecac was furnished him in case he could not otherwise control his inordinate appetite. He was especially instructed as to hygiene and strenuously advised to eat but little, especially of meats. On the 14th of April he returned. He reported that he had carried out instructions. Albumin and casts had entirely disappeared from the urine; œdema about all gone; looking better and quite cheerful. Examined several times since the second visit; he shows no sign of trouble except his obesity. About six months ago this man had what appeared to be kidney colic. I examined his urine at that time and a number of times afterward. There was no albuminuria then.

I know full well the imperfection of the data herein given. It is with diffidence that I give them to the medical profession, with the hope that enough interest may be excited in this subject to cause clinicians with hospital and laboratory facilities and abundant material to make a discriminating study of the remedy, hydrastis, in its relation and application to kidney diseases and to give it the proper value. Meantime, to my fellow-practitioners of the country and small towns, I say, try it for yourselves, with such advantages as you have.

Nothing will reconstruct a degenerated organ, but it is not too optimistic to say that a vital organ capable of functionating may be amenable to some assistance and the beginnings of morbid processes may be effectually arrested.

There is another class of cases involving the kidney, in which I have only made one trial of this remedy, namely: the toxæmics of pregnancy accompanied with dropsy and albuminuria. This case came under my observation about the first of March of 1908. Examination of the urine showed no albumin at that time. Subsequent examinations gave the same result, but about the first of April the husband brought a specimen of urine and made the statement that his wife was becoming œdematous, had headaches and numerous specks before the eyes. Examination of the urine revealed albumin. Microscope showed no casts. The patient was advised to avoid eating meats, to take milk and vegetable diet, but in all diet to be abstemious. Patient was given saline purgatives and diuretics. Small doses of protiodide of mercury thrice daily. Mixed bromides were given to control headaches and nervousness. Several reports and examinations of urine ranging through a period of two weeks showed no substantial improvement. Then all medicinal treatment was dropped, except fluid extract of hydrastis, half drachm doses every four hours and mixed bromides as required. At the end of one week there was little change, but slight diminution of albumin in the urine. Treatment was continued. The patient living in the country was not heard from again until the 30th of April, when she was delivered of a child with no untoward event. On questioning her she told me that the dropsical swelling had disappeared as well as the headache and spots before her eyes before the time of her delivery. I had no other opportunity to examine the urine.

The very high cost of this remedy is a serious drawback to its use in many cases. The plant is said to be becoming scarcer and scarcer, yet its habitat extends over a large section of country. Up to the present it seems to be gathered as it grows wild and its area constantly encroached upon. It may be that its usefulness and very high price may lead to its successful cultivation.

A CASE OF MYXŒDEMA CLOSELY SIMULATING BRIGHT'S DISEASE; WITH A NOTE ON THE TREATMENT OF RENAL ALBUMINURIA BY THE ADMINISTRATION OF HYDRASTIS CANADENSIS.

BY RICHARD N. DUFFY, M.D., NEW BERN, N. C.

The following case is of interest for two reasons: first, in showing the effect of hydrastis on renal albuminuria, and second, in showing how easily one may be misled in the differentiation of chronic nephritis from myxœdema.

Mrs. M., a white woman, 53 years old and a native North Carolinian, was first seen by me on December 31, 1907, complaining of "swelling of body, weakness," etc. She gave the following history:

She is a widow and has had five children and two miscarriages. Her father and mother both died of "paralysis." She was delicate as a girl. Had chlorosis at nineteen years, "typhoid" fever when her first child was born, pneumonia nine years ago. She has had a great many chills and fevers. Her appetite and digestion are usually good and her bowels regular. There has been no evidence of chronic pulmonary involvement. She has had some shortness of breath for about a year. Has had to get up about three times every night to urinate for the past year or two. Her urine has at times been cloudy. She has never noticed any blood or any burning or pain on urination.

Her menses were regular and painless until June, 1907. At this time the flow lasted 28 days. It again appeared slightly on July 1st. The latter part of July she had two severe hemorrhages. She passed large clots and became almost exsanguinated. About this time her abdomen began to swell. She has had swelling of her hands, feet and eyelids for about three years. She began to grow stout about three years ago and has gained 43 pounds in this time.

When her abdomen began to swell after the hemorrhages last summer she went to Dr. Stokes's Sanitorium in Salisbury and was operated upon, a pan-hysterectomy being done. Before the operation she felt "tired out," as she expresses it, all the time. Immediately after the operation she was very much better, but has since grown worse.

She now feels tired out most of the time. Wakes up tired in the morning. Her appetite and digestion have remained fairly good and her bowels regular. She sleeps fairly well, but often in the early part of the morning wakes up with choking sensations and feels as if she were going to die. Her lids are sometimes so swollen that she can hardly see. She tires very easily and sometimes has dizzy sensations. Her throat often feels full and tongue thick, and it seems difficult to talk. Her memory has become defective and she is suspicious and irritable. There has been some numbness in the left leg.

On examination it was noted that the patient had a stupid, "toad-like" look. The face showed a pasty pallor. Eye lids were œdematous and translucent even. The whole face seemed swollen. The mouth was large and lips and tongue thick. The tongue was protruded in the mid line readily and was not tremulous. Eyes were normal in appearance and movements except for their dull and stupid look. It was noted that the patient was extremely garrulous. Her pulse was 29 to the quarter, regular in force and rhythm and of good volume. The tension was only slightly above normal and the vessel wall just palpable. Her hands were dry and skin dry and harsh all over body. It felt also distinctly thicker than normal. The thyroid gland was not palpable. No tremor of hands and no ataxia. No signs of paralysis. There was no general glandular enlargement. The nutrition of her hair was defective.

The heart and lungs showed no abnormality.

The abdomen was full. Panniculus well marked and skin thick and harsh. A well healed scar of operative wound was

seen in the mid line below the umbilicus. No masses could be palpated in abdomen and there was no tenderness. Neither kidney nor spleen were palpable.

Skin over shins and feet was observed to pit slightly on pressure. Skin elsewhere on body did not pit on pressure, though having an œdematous appearance. The "knee kicks" were active. Babinski's sign was not present.

Examination of the urine revealed a heavy ring of albumin with Heller's test (at least $\frac{1}{2}$ of 1 per cent of albumin). The urine was slightly acid, yellow in color, clear, specific gravity, 1.030; no sediment. The centrifugalized specimen showed epithelial cells, white blood corpuscles and unmeroces hyaline, finely granular and epithelial casts.

My first impression of the case was that it was one of myxœdema, but after an examination of the urine, the diagnosis of chronic nephritis was made. I failed to state that the urine of this case had been examined repeatedly some time previously by several other men suspecting Bright's disease without finding a trace of albumin.

The patient was put on a limited diet, advised to take a daily tepid bath, to keep her bowels open, and take a moderate amount of outdoor exercise. She was given Blaud's pills, grs. 5, three times daily after meals, and strychnia, gr. 1/40 three times daily before meals.

There was only slight improvement under this treatment, and on January 17th, after having heard of my father's and uncle's (Drs. Charles and Frank Duffy's) experience with hydrastis in the treatment of various forms of Bright's disease, she was started on fl. ext. hydrastis gtts. 20 every two hours. On January 25th it was noted that her condition was somewhat better. Her nights were much better, and she was not so tired out. There was, however, a great tendency to drowsiness. Her general appearance remained about the same. The hydrastis was increased to gtts. 30 every two hours.

On January 28th the albumin had decreased to one-fourth the original amount. The specific gravity of the urine was

1.010. On February 5th the albumin was reduced to one-eighth the original amount. The patient's symptoms were somewhat improved, though her appearance remained about the same. The hydrastis was now given in 30 gtt. doses every three hours.

The patient continued about the same. The albumin gradually decreased in amount until February 27th, when she complained of much nausea, severe vomiting and dizziness. This was attributed to uræmia, but an examination of the urine at this time showed marked improvement and the patient complained bitterly of the hydrastis. This was stopped and condition soon cleared up after purgation, sweating, etc.

The hydrastis was not given again until the nausea had been absent for several days, and was then given in teaspoonful doses after meals. Some cases do not take hydrastis well. There seems to be a cumulative action which finally ends in severe nausea and vomiting. This patient, for several days before her attack, complained bitterly of the constant nauseating taste of the hydrastis, and when she first began vomiting she said it seemed to her as if she were vomiting pure hydrastis. Very large single doses may be borne with impunity, but constantly repeated doses are in some cases apt to have a poisonous effect. It seemed in this case, after reconsidering the facts, that her vomiting was due to the action of the hydrastis and not to uræmia, as was first thought. Since this time she has been cautioned to stop the hydrastis immediately as soon as she began to be disturbed by its nauseating taste, and since following this plan she has had no further trouble.

The patient has continued the hydrastis up to the present date with steady improvement in the condition of the urine. Notwithstanding this, her disability has constantly progressed and her appearance has not been improved as one would expect it to be considering the marked improvement in her urinary condition.

On May 23d an examination of her urine showed only a very slight trace of albumin and only three hyaline casts were

found in the centrifugalized specimen. Thinking it most peculiar that, if the case were one of chronic nephritis pure and simple, there was not more marked improvement in the patient's general appearance and symptoms, considering the very marked improvement in the urinary condition, my original diagnosis of myxœdema was reverted to and the patient given one grain of thyroid extract after each meal. There has since been marked improvement. In about three weeks time on this small dose the patient lost six pounds in weight. Her appearance became much more animated and intelligent, and her strength rapidly increased. The dose of the thyroid extract has now been increased to gr. 2 three times daily after meals and will be gradually increased to grs. 10 or 15.

Her improvement continues and the case evidently seems to be one of those cases of myxœdema which are complicated by renal involvement. The marked effect of the hydrastis in lessening the amount of the albumin and the number of the casts is especially noteworthy.

[In a later note the author of the above says: "Since the paper was written the patient has practically entirely recovered under the thyroid extract and fl. ext. hydrastis. She has lost 33 pounds in weight and is now a bright, vivacious woman, able to attend intelligently to her business and other affairs; whereas, only a little over a month ago she was a stupid, toad-like creature and a great care to her family. Both the albumin and the casts have disappeared entirely from her urine."—Ed.]

ADRENALIN CHLORIDE: ITS USES IN MEDICINE.

BY C. O. ABERNETHY, B.S., M.D., RALEIGH, N. C.

The term adrenalin chloride is used in this paper to designate the physiological activity of the suprarenal glands, because this preparation of the drug is most used. There are various other preparations on the market which have the same physiological action.

Adrenalin chloride when applied directly to a raw surface or mucous membrane causes a blanching of the tissue by its constricting effect upon the involuntary muscle fibers which are under control of the sympathetic nervous system. The muscles which do not contain sympathetic fibers are not supposed to be acted upon. Hemorrhage from an exposed blood vessel is controlled by the application of adrenalin chloride, due to its action upon the vasoconstrictor mechanism and by its slight increase in the coagulability of the blood. Continued application under pressure is necessary for the best results in this respect.

The most pronounced physiological action of adrenalin chloride is its effect upon the circulatory system after absorption or when transfused directly into the blood current. The rate of the heart's action is at first decreased by stimulation of the vagus, but later increased by direct stimulation of the vasomotor mechanism of the heart muscle. The vasoconstricting action causes a contraction of all blood vessels, but especially the arteries and arterioles; thus the blood supply to all mucous membranes under control of the vasomotor system is lessened. The combined action on the heart and constriction of the arteries causes a very marked increase in blood pressure, which is most marked after intravenous injection of the drug. This high blood pressure causes an increase in the watery elements of the urine.

Local Use.

Adrenalin chloride is used very extensively in controlling hemorrhage where the drug can be locally applied. One of the best remedies we have in controlling epistaxis is to pack the nasal cavities with gauze saturated with a 1/1000 solution of adrenalin chloride. It is also used to control hemorrhage after operations in the throat and nose; and it can be used, and is an excellent remedy, in any bleeding where the part is locally accessible. It has the advantage of other local hemostats in that it leaves a clean surface. To be of the most service in these cases the drug must be in contact with the bleeding surface during a continuous period of time; that is, applied on a pledget of cotton, and best, under slight pressure.

In acute coryza, rhinitis, pharyngitis, tonsilitis and other affections of the air passages adrenalin chloride in the form of a spray has proven very efficacious. Its strength as used varies from 1/2,000 to 1/10,000. In inflammation or pus in the antrium or frontal sinus adrenalin chloride spray has proven very beneficial in my hands. The action is by constricting the tissue at the openings of these cavities, thereby allowing free drainage. These cases are often cured, and when not completely cured are benefited by this treatment.

The use of adrenalin chloride in conjunction with cocaine in operations on the eye has been very highly recommended. It prolongs the anesthesia and in addition lessens the amount of hemorrhage. There is also a tendency to prevent absorption of cocaine, thereby lessening the danger of poisoning. It is also used in minor surgery in combination with cocaine.

Use in Controlling Distant Hemorrhage.

The use of adrenalin chloride in checking hemorrhage in vessels not accessible to local application, as in the lungs and intestinal tract, has in its favor the fact that in addition to constricting the blood vessels it also slightly increases the coagulability of the blood, but I think the sudden increase in pressure more than counterbalances the above apparent ad-

vantages. Its value is again decreased when administered by the mouth, due to the readiness with which it is decomposed in the stomach; thus very little effect is produced in the intestinal canal. Then in the lungs there is the possibility of not having the vasoconstricting effect, and we get a dilated vessel with an increase in pressure which would make the hemorrhage greater; therefore, I think the use of adrenalin chloride in controlling distant hemorrhage should be discouraged, as it probably does harm, as may any substance which increases blood pressure.

Use as a Heart Stimulant.

Adrenalin chloride is being very extensively used now as a heart stimulant, and it is one of the best in certain conditions. In collapse from chloroform or ether during surgical operations an excellent stimulant to tide the patient through the shock is ten minims of adrenalin chloride given hypodermatically and repeated if necessary. Its advantages are that it acts very rapidly and powerfully. So in any condition of shock characterized by low blood pressure, such as chloral poisoning, etc., adrenalin chloride is the stimulant of choice; but this drug should be used with care in heart affections where the blood pressure is not lowered, or in very old people or people with calcareous arteries.

Use in Bronchial Asthma.

Adrenalin chloride in the form of a spray has been used in treating bronchial asthma and hay fever for many years, but its use hypodermatically is of very recent date. I wish to lay especial stress on the hypodermic use of adrenalin chloride in the treatment of bronchial asthma. I have used it in many cases with satisfactory results, the most severe spasm of asthma being almost immediately relieved after the hypodermic injection of ten drops of the 1/1000 solution. I use it in the concentrated form; however, it can be used either concentrated or diluted with normal salt solution or sterile water. I use it in the concentrated form and have seen no

discomfort therefrom. In fact, I believe it to be better on account of a smaller amount of fluid to inject under the skin. This dose, if necessary, can be repeated every two or three hours, but usually the effect of one dose lasts from three to six hours. I have seen no ill effects from the continuous use of the drug, it not being necessary to increase the dose, but it is claimed that prolonged use will cause a hardening of the arteries. The action of this drug on asthma probably throws some light on the pathology of this disease, as it is hard to conceive how adrenalin relieves a spasm of the bronchial tubes, but the action on a turgescence of the mucous membrane is easily understood.

Use in Pleuritic Effusion.

There have been cases reported where adrenalin has been used in pleuritic effusion. After aspirating the cavity, a solution of adrenalin chloride is injected through the aspirator. It is also recommended to be used in ascites. The action in these conditions is not fully understood.

Dangers in the Use of Adrenalin Chloride.

The dangers in the use of adrenalin chloride are very few. Immediately after the administration of the drug the patient who has taken it has a tingling sensation and feels nervous and turns pale, which is caused by the sudden action of the drug on the blood vessels, and is soon overcome. This is the normal action of the drug and should cause no alarm. The especial danger in administering adrenalin chloride is the rupture of an artery, due to the sudden increase in pressure; therefore great care should be exercised in giving it to people who have any degeneration of the arteries, especially old people.

TOXIC CHANGES FROM PROLONGED USE OF ACETANILID.

BY H. H. KAPP, M.D., WINSTON-SALEM, N. C.

That chronic poisoning characterized by degenerative changes in the blood and pronounced physical signs, as congestion of the spleen, liver, and kidneys may result from the continued ingestion of the anilin derivitives is well known, as it is also well recognized that acetanilid, one of these products, because of its small cost and its toxicity in excess of others of this group in common use, renders it particularly liable to be the offending agent. Acetanilid is the chief ingredient in headache powders so generally dispensed by druggists without prescriptions, as it is in certain secret nostrums or quack medicines both in use by the rank and file of the profession, and unfortunately thus introduced by them to the laity in the form of antikamnia, ammonol, organine, phenalgin, bromo-seltzer, salacetin, and different headache powders. The toxicity of acetanilid in common with the other coal tar products of the antipyretic group has long been known, and the serious, if not fatal, results which may follow its incautious use in fevers and debilitating conditions, especially in the very young and very old, should have in past years been brought forcibly to the attention of the reckless seeker after a remedy to reduce temperature or to relieve pain. But the knowledge of the toxic action of this group, and especially of acetanilid from its cheapness, has had little effect on the unscrupulous, who have found a ready and anxious market for certain compounds offered as cold nippers, analgesics, etc. Attempts have been made to overcome the immediate ill effects of the drug by combining it with small quantities of caffein, and the very popular nostrum now—I suppose pretty well known throughout the civilized world—contains these as chief ingredients, which also enter into the make-up of nearly

all so-called headache powders. For a brief review of the physiological action of acetanilid and other of the coal tar antipyretics, we note that first on the NERVOUS SYSTEM they act as a sedative to the sensory side of the spinal cord and sensory nerves having little or no effect on the motor side. Second, on the CIRCULATION it tends to depression rather than stimulation, there being an immediate fall in arterial pressure with a diminished pulse rate, the heart as well as the vasomotor system being depressed. Third, on the BLOOD, after continued use, we find the characteristic brownish-red or chocolate hue to this fluid, from the presence of methemoglobin, and disintegrated red blood corpuscles—and interference with oxidation. Aside from the beautiful tinting of the red cheeks in the beginning of tuberculosis, being all the more striking from the anæmic condition of the surrounding skin, there seems to me nothing so diagnostic in medicine as the dirty, dingy-looking, cyanotic face of the constant user of bromo-seltzer, antikamnia, or other headache remedies containing acetanilid or its cousins, antipyrin, phenacetin, etc. Fourth, on the RESPIRATION no effect has been produced in moderate doses according to Hare, though we find it is rather a depressant, large doses producing death by paralysis of the respiratory center. Fifth, on the TEMPERATURE; it lowers normal body temperature and on fevered temperature it acts as a powerful antipyretic, lowering fever by decreasing heat production, through its action on the corpus striatum, and increasing heat dissipation through the pores, etc., through its action on the nervous system. Sixth, on the KIDNEYS we notice after prolonged use the excretion becomes dark from the presence of broken down blood coloring matter, and I have found traces of albumin. That the action of acetanilid is more pronounced on the blood than on any other part of the system is generally recognized. Consequently its effects on the circulation, respiration, temperature, and elimination, are all probably secondary to the blood changes brought about by too large a dos-

age or by prolonged use. The dose which most commonly produced symptoms were ranged from three to ten grains.

Then, to return to the clinical toxic action of these coal tar derivatives, I have now under observation a man aged forty, of splendid physical development, who first consulted me about his digestion. He was not given to alcohol and but moderately to tobacco, getting an abundance of fresh air and exercise, and having no element in his life unconducive to well-being, yet he had been unaccountably out of sorts for the past year or two. You were at once struck by the peculiar sallow, dusky hue of his skin, and bluish lips. Examination of the chest showed this not to be attributed to any respiratory or cardiac disability. Inquiry elicited the fact that for two or three years his habit had been to take headache powders. He had formed the habit of taking them at first for relief of headache and finally when at all out of sorts. He had invariably taken one on arising in the morning and sometimes several (eight or ten) through the day, but often only two or three. These were a proprietary preparation sold under the name of a certain doctor's headache powders. The blood as it stood on the ear showed a decided chocolate hue, indicating the presence of methemoglobin, hence it was impossible to make the usual test for the hemoglobin estimation. A blood count was then made and the erythrocytes or red blood cells were found diminished in number to 3,260,000 per cm., showing variation in size and shape, the microcytes and poikilocytes being in abundance. The leucocytes were increased in number to 9,600 per cmm. The leucocytes being in abundance, the Ehrlich triple stain was used and a differential count was made. Upon examination polymorphonuclears were found most abundant, next the large lymphocytes, then the small lymphocytes, and a few eosinophiles. The blood examination was made five hours after the only meal of the day, a lunch of the white of two eggs, toast and cup of weak tea. There was therefore present a pathologic leucocytosis and a diminution in the erythrocytes, the cause of which, an

acetanilid toxæmia, was not hard to seek, other factors being excluded by careful inquiry. The kidney secretion in this case was practically normal.

Another case that was of interest to me from the fact of my first diagnosis gave me a history like this: A young lady, aged 24, typewriter, consulted me on account of increasing weakness, shortness of breath and nervousness. She had noticed a blue color to the lips and finger nails. There was occasional palpitation of the heart and a sense of throbbing in the neck. For several years she had suffered from facial neuralgia and later from severe headaches, which kept her awake at nights. With these exceptions her health had been good. Heart sounds indistinct and vibrating, with hemic murmur at base of heart, but no murmur at apex. Lungs negative. Spleen slightly enlarged. Reflexes normal. Slight tremor in hands, but no enlargement of thyroid gland. Eyes prominent. The blood examination showed the red blood cells only 1,860,000 per cm.; white blood cells, 19,000 per cm. Color index low. A diagnosis of anæmia was made and cardiac stimulants with iron, arsenic, etc., prescribed, daily outdoor exercise and forced feeding.

The symptoms showed no signs of improvement for fourteen days, when it was discovered by inquiry that patient was taking from three to six tablespoonfuls of bromo-seltzer daily for her head, which meant that she was getting from thirty-six to seventy-two grains of acetanilid daily.

This was stopped and same treatment continued, when patient made a complete and steady recovery.

Another case difficult of diagnosis from the fact that patient did not consider herself sick nor desire medical attention, was that of a young married woman, aged 24, whose husband first consulted me about her. The history, briefly, was this: Following an ovariotomy she suffered pelvic pain and a relative, who was a druggist, suggested phenalgin capsules as a means of relief. At first she would get a dozen at a time, and finding relief, began buying them by the bottle (a

rather expensive luxury when he think of five cents worth of acetanilid ammonium carbonate and bicarbonate of soda for $1.25). The relief was temporary, however, from this, and as the pain returned more capsules were taken and in larger quantities each week. This had been going on for more than a year. She would sit for hours if undisturbed, complained of being tired, and was unable to perform any muscular effort, having dyspnœa on exertion. She was given to attacks of despondency. The face was ashy white, lips and lobes of ears were blue and the hands, at first apparently dirty, were found cyanosed to the second joint. Mucous membranes were pale. Expression vacant, tongue coated, breath the foulest I ever noticed, and the pulse ranged from 85 at rest to 130 on exertion, of low tension. Skin cold and lifeless. General tremor of both station and fingers. The blood count showed red blood cells only 2,600,000 per cm.; the white blood cells 11,000 per cm.; color index low. Noting the composition of phenalgin we find its chemical name is given as phenylacetanide, which, according to Remson, is a chemical synonym for acetanilidum.

Hence a diagnosis of acetanilid toxæmia was made. The drug was withdrawn, strychnia and digitalin in capsules were given every four hours, pepto-mangan (Gude) was given before meals, and Fowler's solution of arsenic after meals; the result being final and complete restoration.

The blood studies made in these cases were of unusual interest to me, as I have never seen a report of blood counts in slow acetanilid poisoning, and it showed the blood using its usual army of fighters to ward off the toxæmia, with its increased number of leucocytes just as it would in septicæmia or appendicitis. On the other hand, we all see frequently the cases of acute poisoning from acetanilid with the sudden onset of blue lips and fingers, livid cyanosed face, forehead and cheeks covered with beads of sweat, which gradually extend over the entire body with the soft, slow compressible and finally very weak pulse. Of this class I will only mention

one case, a child of twelve months with a general weeping eczema, whose mother sent to the drug store for some healing powders and was given equal parts of boric acid and acetanilid. This was used frequently, when the above-named symptoms appeared from absorption through the abrasions, and the child was apparently dead when I first saw it. The powder was removed and stimulants with atropine given, and hot normal saline solution used, with a final recovery. While I have never seen oxygen used for these cases, it seemed particularly indicated in this case, especially when we think of the depressing effect of acetanilid has on the oxygen-carrying power of the red blood cells. To summarize, it shows positively that we can get symptoms of acute poisoning from acetanilid where it is used as a dusting powder on abraded surfaces in young children or the debilitated, as well as when taken by mouth. It should be kept in mind in prescribing acetanilid mixtures that no action is produced by them on the *cure* of the disease. They are of value in the treatment of symptoms, mainly such as relieving pain and reducing temperature, and all such prescriptions should be marked, "Not to be refilled." Therefore, to obtain permanent results, other measures can be employed which are of greater value. In cases of fever the patient is not made better by these drugs, but, on the other hand, convalescence is prolonged. The effects of antipyretics varies, not only with the dose, but with the individual patient. Many can take without harm apparently very large doses of these preparations, while in others minute quantities produce alarming symptoms.

MORPHINE AND KINDRED DRUGS: THEIR USE AND ABUSE.

BY D. A. GARRISON, M.D., BESSEMER CITY, N. C.

The object of this paper is, not to set out anything especially new, but to state a few facts, briefly, as I have found them by experience.

Opium is a stimulant, narcotic, anodine, antispasmatic and intoxicant. To get at the facts that I want to set forth, I shall necessarily have to touch briefly on its physiological action.

Its taste is bitter and somewhat acrid; it causes dryness of the mouth and throat, and therefore causes a huskiness of the voice, which is easily detected; it restrains movements of the bowels and dries all secretions except secretions of the skin. Opium as a stimulant should be given in small doses. Five drops of the tincture have good effects in cases of weak and dilated heart. Morphine given hypodermically has fine effect on asthma, pleural effusion—respiration becomes easier and lividity disappears and sleep is rendered profitable. In bronchial and lung trouble, opium combined with a good expectorant mixture depresses cough and quiets the patient.

In pneumonia, opium is of advantage in relieving pain and extensive cough—here it is better given in form of Dover's powders; in typhus, typhoid fever, smallpox, etc., small doses are of great advantage, given at night to maintain the strength of the patient. It is given in all forms of neuralgia and ovarian and menstrual troubles. Where deep burns occur, hypodermic use of morphine is invaluable.

Herpeszoster is another malady, in which morphine given with atropine is of notable service. It is one of the most important ingredients in all cough remedies. Opium and codeine are used with some degree of success in diabetes. In entercolitis and all forms of bowel troubles in children, it is

almost prohibited, because of the effect it has upon the brain; if given at all, it must be given by rectum and starch water enemata and hydrate of chloral.

Morphine given subcutaneously is a good remedy in vomiting of pregnancy, nausea, nervous vomiting and all forms of colic. Large doses should be given in lead colic. Some patients can not stand opium in any form, but, on the other hand, others stand it too well. No one, not even a physician, should take opium in any form at his own instance. I think taking a small dose to relieve toothache, headache or any other ache, should be prohibited by the law, except it be prescribed by a physician, and then it should be cautiously given. Some of the bright minds in our profession are ruined by being overworked and rundown and, to hold up, begin taking morphine and cocaine.

It is only a matter of time when he becomes a great doper and, sooner or later, it gets the best of him; it renders him worthless—the truth is not in him. I would to God that all the profession would stay clear of these terrible, destructive drugs.

Now, since we have prohibition in this State, we must be more careful how and for whom we prescribe the drugs; because it looks as though the American people are compelled to have something to take that they can feel the effects of. We, as physicians, should not be satisfied with being healers or curers of diseases, but we should be preventers of diseases and drug habits. It is an awful thing to see a bright mind destroyed by these drugs, which are almost as necessary as the food we eat. I claim that ninety per cent of all the cocaine and morphine fiends are caused by the attending physician. He will go to see the poor sufferer and give him a good large dose—it will relieve and the patient will want the same thing when the pain returns—the doctor can not go or does not want to go, and sends a dose of morphine, and the patient, of course, becomes happily relieved of the pain.

Well, they will ask the physician what it was. Why do they ask? So that they may get some and keep it on hand in case of an attack, and I have never seen a case but what the pain would return about the same time of day or night, if the habit is once formed. I think we, as physicians, should not even tell our patients what they are taking, and when we are compelled to give opium, give it in combination with something else so that the patients will not know what they are taking. I often read of great crimes committed, such as suicides, homicides, thefts, etc., and when we look into the cause we find in 25 per cent of the cases some vicious habit, and mostly the morphine and cocaine. I hope that you can enforce the laws of our State and stop the druggists from selling these drugs to any one except on a prescription. I find, already, people buying tincture of opium, camphorated, to get the alcohol in it. I know a young man who can drink an ounce of paregoric and feel good almost a half a day on it.

We must ask our next Legislature to enact prohibitory laws of the great evil. I admit we must have opium and kindred drugs, but we must control it; if we do not control it, it will control us. I hope the profession will see the great danger we are in, when the whiskey is gone, and prepare themselves to meet it. Let us all work together to build up mankind and not to tear him down.

EARLY RECOGNITION AND TREATMENT OF TOXIC AMBLYOPIA, AS CAUSED BY THE ABUSE OF ALCOHOL AND TOBACCO.

BY J. H. HONNETT, M.D., WILMINGTON, N. C.

The term "amblyopia" implies impairment of vision due to lack or loss of sensibility in the optic nerve, or its anatomical continuation, the retina.

Under the heading of toxic amblyopia belong those cases primarily due to the presence of poisonous materials in the blood. These materials may have their origin in the body, as in uræmia, diabetes, malaria, and certain infectious conditions, or may be introduced into the system, as in the cases of alcohol, tobacco, and lead; also, occasionally, by certain drugs, namely—quinine, santonin, etc.

These cases, due to excessive use of alcohol or tobacco, usually to both, are most common, and if seen early enough, are so easily recognized and so amenable to treatment that I feel a few words on this subject may prove beneficial to the practitioner when not within the reach of men doing special eye work; enabling him to correctly diagnose, and, by prompt treatment, prevent the disastrous consequences too often attendant in these cases.

I shall pass very briefly over the pathology. In early stages, and even later, in some cases, there are few or no structural changes, the functional disturbances being probably caused by poisoning of the nerve centers.

If the means for an intra-ocular examination with the ophthalmoscope be at hand, the edge of the optic disc may appear blurred and irregular, and the disc itself rather pale. In neglected cases, the disc becomes atrophic and dead white in color, this atrophy at times extending backward into the optic nerve.

The usual picture of these cases is as follows: A male,

around middle age, complains that both far and near vision in both eyes is failing rather rapidly. Patient will lay more stress on the defection of distant vision. General examination of the eye is negative.

We elicit a history of constant use of strong pipes and chewing tobacco. Patient, after some questioning, admits that he uses alcohol steadily, and has done so for years, in the form of whiskey or brandy. In the absence of other signs pointing to the cause of failing vision, the following simple little test may be applied: Two discs, one of bright red paper, and the other of green, each round, and about one-tenth of an inch in diameter, should be attached to handles, such as small pegs of wood. The patient is directed to close one eye; one of the colors is held directly in the central line of vision, at a distance of from twenty to forty inches away from the open eye. This is repeated with the other color, and the patient is asked to name each color. If the defect of sight is due to alcohol or tobacco, patient will be unable to name either color, or will do so incorrectly. This test is repeated with the other eye, the object being to establish the presence or absence of central scotoma, or blind spots, for red and green. This is an early and constant sign in the condition under consideration.

Some of the older authorities consider tobacco a more potent factor in causation, and point to some cases where there is no history of alcohol. I recall the case of a man who has continued to drink steadily and heavily, but has given up tobacco entirely, and he has improved to a great degree; yet, it is probable that nearly all cases are due to the combined habits.

The treatment is simple. Alcohol and tobacco are to be absolutely and positively interdicted. Strychnine in doses of from one-thirtieth to one-twentieth of a grain is to be administered three times daily. Potassium iodide in the saturated solution is to be given, in doses ranging from twenty-five to

forty drops, three times daily, according to gastric tolerance. Hot and cold baths, massage, rest, a general tonic regime, and liberal diet, are useful adjuncts.

The progress toward recovery will be most gratifying, the patient often regaining normal, or greatly improved, vision, in a few weeks.

In conclusion, I apologize to you gentlemen for presenting to you this simple paper, containing facts probably already known to you, but I am inspired to do so, for the reason that, from time to time, cases of this kind come within my observation, unfortunately too late, and the patient is doomed to wander in darkness, whereas, if the nature of the case had been understood and properly treated in the early stages, sight and usefulness could have been restored.

A BRIEF REPORT OF SOME CASES WHICH HAVE YIELDED SURPRISINGLY TO ELECTRICITY, TO X-RAY TREATMENT, SNOW'S TUBES AND MECHANICAL VIBRATION.

BY J. THOMAS WRIGHT, M.D., WINSTON, N. C.

Mr. President and Gentlemen:

The object of this paper, however brief, is to stimulate original research and investigation along the lines here outlined, as some results which I have, in some instances, unexpectedly achieved, have led me to believe that much more may be done with the X-Ray, violet light, electricity and mechanical vibration, or what I am pleased to call "physical medicine," than we at present dream of.

To get a thorough understanding of the principles of treatment by physical or mechanical means we have to revert to the "cellular theory" and remember that the whole body is composed of an enormous aggregation of individual and distinct classes of cells, viz: nerve cells, bone cells, muscle cells, blood cells, etc., and that "omnia cellula cellulæ," and also that these cells can not functionate without proper metabolism, nutrition and elimination, which presupposes a proper or normal circulation of the blood, and exercise, or functionating of the cell itself.

Thus it is easy to see that any impairment or stagnation of the circulation—due to inactivity, heart disease, cirrhosis or other disease—would in a measure be detrimental to cellular activity and the *proper* performance of duty. Again, if the particular cells composing a certain organ of the body be starved, irritated or impaired by disease, it is reasonable to suppose that the activity and secretions of that organ would be correspondingly impaired and vitiated. Also, if the "nerve force" generated by the nerve cells of the brain, cord and sympathetic plexuses be weak and below par from inanition or

lack of nutrition, irritation by toxins, or from other causes, we will necessarily have impairment of activity or function of that organ or organs involved and supplied by nerve branches from those particular nerve cells, and a deterioration of the quality as well as the quantity of the secretions ordinarily generated or produced by them.

So much for cellular pathology.

Now, electricity, vibration, X-Ray, light, massage, etc., act, as we know, directly and indirectly by cellular stimulation, forcing the cells into action, and also by inhibition; preventing germ growth and disease.

Applied over the centers in the cord, as well as over the organs themselves, to arouse their ganglia and other nerve and cell tissue, vibration—either electrical or mechanical—will produce most gratifying results in awakening to normal action cells and organs long dormant. Coupled with "mental therapy," in the shape of healthful and wholesome suggestion, you have a most potent factor for good and to combat diease.

In my study of these physical aids to regular drug medication, I have made numerous experiments, especially with the X-Ray, in cases which to me seemed to offer some hope of success, or in which I thought treatment by that means applicable, and have in most instances been rewarded, while in other cases the results were *nil*. Still, the cures so obtained were so vastly superior to results heretofore obtained, that I felt justified in striking out for myself along original lines of investigation; and I predict that within a very few years pure and simple *drug* medication—if antitoxins, opsonins and animal therapy be not included—will occupy an obscure place in scientific medicine.

I report below a few cases of widely different natures, or characteristics, with results as to treatment:

Case XX.—Mr. S——; age 52. Diagnosis: Epithelioma of the inner portion of right eyelid, involving the tear duct

and side of nose, conjunctiva, etc. This man, a merchant and pawnbroker here in the city, had been treated both in New York and in Boston by skin and eye specialists, with only temporary benefit. In his case I used only the X-Ray—small soft tube—concentrating the rays by means of my funnel-shaped "concentrator," to a volume corresponding in size to the affected area.

The treatments lasted fifteen minutes each—the tube placed at a distance of nine inches from the face—the face, eyebrows, hair and other exposed portions of the body being, of course, protected.

Twelve treatments, 48 to 72 hours apart, completely cured his trouble without noticeable scar or injury to sight. After one year's time there is no return of the disease.

Case XIV.—Mrs. D——; age 58. Diagnosis: Carcinoma of left breast, with great glandular enlargement, involving the left axilla and lower cervical region. This patient, a married lady, referred to me by Dr. F——, of this city, had marked cachexia and general declining health, as she had been suffering for twelve or fifteen months with the cancer, which, at the time I saw it, had an ulcerating surface of two and a half inches in diameter, and half an inch deep, while a hard cake some four inches in diameter occupied the deeper structures of the breast, and a similar mass occupied the left axilla, as before mentioned. I treated this case about three months with the hope of prolonging life and rendering the patient comfortable. To my surprise the patient made an apparent cure—the ulceration ceased and the place healed over, the glandular masses in the breast and axilla decreased in size and practically disappeared, and I had hopes that the patient would make a complete recovery. But, about six or eight weeks after I ceased treating her she developed a stomach trouble, which I have reason to believe was of a cancerous nature—probably developed from metastasis—and after a

few weeks illness died. I did not see her during that illness, but obtained the facts from Dr. F——, her family physician.

This was a case where procrastination proved suicidal, for had her case been treated early she would have made a complete recovery, and no doubt lived many years.

In this case I used only the X-Ray, in the manner described above in Case XX, both over the ulcerated area and over the glandular enlargements.

It is remarkable how the X-Ray will ease the horrible pain due to cancer. In cases of this nature the eliminating organs should be kept specially active during treatment, so as to throw off the toxins and other effete material produced by the destruction of the cancer and the unavoidable absorption which takes place. This fact should not be forgotten.

Case X.—Miss S——; age 19. Diagnosis: Acne of face, complicated with scaly or desquamative eczema. Duration, two years.

Treatment.—Corrected diet and menstrual irregularity; pressed out the black-heads and opened the pustules, and ordered an antiseptic lotion. I gave treatment with Snow's vacuum tube over the face, gave the static wave current, and used mechanical vibration over the face and spinal centers, followed later by short exposures by the X-Ray (5 to 8 minutes)—the hair, eyes and brows being protected. Treatment occupied six weeks. Result: Cured, patient being left with a fine complexion.

Case XXV.—Mrs. M——. Policeman's wife; aged 42. Diagnosis: Chronic eczema of hands, arms, front of shoulders and neck and part of face. Cervical glands enlarged. Duration, five years.

In this case the X-Ray, with soothing lotions and ointments, were used, but sole reliance was placed on the X-Ray. Result: After some six or eight thorough treatments, occupying three weeks, the patient was discharged cured. During a period of nearly two years there has been no return of the disease.

In this case the prompt reduction of the enlarged glands in the neck induced me to try the X-Ray in the case below:

Case XL.—Young man, aged 23. Diagnosis: Cervical adenitis, with suppuration; probably tuberculous.

In this case I prescribed tonics, nutritious diet, open air, sleeping on the porch, etc., and used the X-Ray directly over the diseased glands—distance, nine inches; time, fifteen minutes, followed by absorptive local applications, such as antiphlogistine, etc.

I treated this case for six weeks, giving an X-Ray exposure from two to three times per week, when the disease entirely disappeared, with the patient's weight increased and general health greatly improved.

Case XLII.—Mrs. ——; age 39. Diagnosis: Multiple fibroids—seven in number. Size: from a cocoanut down to a marble.

This case has been of great interest to me, as the practical removal of these fibroids has been entirely nonsurgical. Massey, Morton and others claim fine results from electrical treatment alone, but in this case I used combined treatment, bringing into play not only electricity in its various forms, but the X-Ray, Snow's tubes—both vaginal and rectal—electrical and mechanical vibration and drugs, with most gratifying results as to cure.

Patient married fourteen years—no children. Trouble from fibroids, malposition, etc., dated back six years. Treated at sanitariums in Atlanta and in Richmond without permanent results. Would not submit to an operation. General health fair—some constipation and digestive disturbance. Rather nervous and excitable. Temperament, emotional.

The treatment in this case was, aside from the tonic effect of the electricity and vibration, purely experimental—with the patient's consent, of course. To go into every detail of treatment would be tedious, so I shall content myself with giving only a synopsis or general outline. The patient was

given Morton's wave current for its tonic effect, and because of its property of stimulating metabolism. Negative insulation and the crown breeze were given for their soothing effect upon the nerves. The induced current was used by uterine electrode. Snow's tubes were used alternately per vagina, rectum and in utero (time 20 minutes). Vibration—heavy strokes—was used directly over uterus and over the lumbar portion of the cord, also over the liver and large intestine. The X-Ray was used with the speculum per vagina, the parts being well protected by tin or lead sheets, and an effort made to throw the rays directly upon the tumors. A larger X-Ray tube was then used to throw the rays *through* the tumors by way of the abdomen. Remembering how cancers, enlarged glands and other abnormal growths disintegrate and absorb, or disappear under X-Ray treatment, and how destructive the rays are to germ life, I felt justified in this method of treatment and that the time would not be entirely wasted, and hence watched the result of treatment with great interest. The identity of the uterus, at the beginning of treatment, was entirely lost in the midst of the masses of fibroid tissue, which, aside from one large intramural—or interstitial—tumor, presented the sub-peritoneal type. As treatment progressed, however, the tumors began to gradually diminish in size until the outlines of the uterus became distinguishable, and later quite separate and apart from the tumors, which seemed to develop pedicles as the shrinkage or absorptive process continued. I wish to state that as to medication, that thyroid extract to the point of toleration was the only medicament used. The treatment of this case on the plan outlined above was continued about seven and a half months, and when last seen there were only the merest rudiments of the original masses of fibroid tissue.

Later I learned that the patient had conceived. I shall watch this case with much interest.

While the above case is not entirely satisfactory from a clinical standpoint, and it is too early to say what the final

outcome will be, yet I do not anticipate any return of the trouble—the menopause being near at hand—and I do know that the weight, enlargement and discomfort incident to the tumors disappeared entirely, and the whole physical condition became greatly improved.

The result of this case gives promise of much in tumors, neoplasms or other abnormal growths. I shall continue my investigations along this line, as the field offers great possibilities.

The above are a few of many interesting and illustrative cases which I have not here time to narrate.

A few words as to the value of vibration and Snow's tubes, and I am done.

I find both electrical vibration (by means of a very short spark gap—using direct spark), and mechanical vibration, useful in cases of constipation, torpidity of the liver, indigestion, neurasthenia, insomnia, muscular rheumatism, neuralgia, sciatica, partial paralysis, etc., and have always obtained results; but to get results the treatment must be carried out intelligently, persistently and with regularity.

Snow's tubes give good results in catarrhal troubles—catarrh of any mucous membrane, no matter where situated. It also gives surprising results in enlarged prostate (urethral and rectal tubes), and in stricture. Piles, unless too large, yield readily to this mode of treatment. I also cured a case of fistula in a physician of our city, where operations failed to benefit.

The intelligent physician will find many opportunities in his practice to use these methods of treatment, and *get results* where drug medication has proven entirely worthless.

Gentlemen, I will close, with the wish that these few words may cause some of you to cut loose somewhat from the beaten paths and to think and work for yourselves, and that medicine in the South may soon occupy a position in the van of medical progress of the world.

Memoranda.

At the forty-ninth annual session of the Medical Society of the State of North Carolina in Wilmington, N. C., in 1902, the address of the President, Dr. Robert S. Young, contained the following:

"At the St. Paul (1901) meeting of the American Medical Association, a new Constitution and By-laws were adopted. The American Medical Association earnestly requests the cooperation of our Society in its organization. The officers of that Association asked me to bring the matter before you. I herewith transmit the correspondence, and beg you to authorize a special committee to consider this subject and report during this meeting."

Page 33, Transactions of the same session, contains the following:

"The Committee on the President's Message reported in favor of the suggestions made; * * * they recommend that a committee be appointed to draft a constitution along the lines laid down by the American Medical Association, and to report to the next meeting of the Society.

"The President appointed the following committee on a new constitution: Drs. J. Howell Way, M. H. Fletcher, H. A. Royster, J. A. Burroughs, Geo. W. Pressly."

In accordance with the instructions therein contained, the committee carefully considered the matter, and after a most critical study of the whole subject, submitted the Constitution and By-laws as contained in the following pages for the action of the Society.

At the fiftieth annual session in Hot Springs, N. C., beginning June 3, 1903, Dr. A. W. Knox, President, the report of the committee was accepted and made the subject of a full and free discussion extending over a portion of two days, when the Society *unanimously* adopted the Constitution and By-laws as reported by the committee and contained in the following pages.

CONSTITUTION AND BY-LAWS

OF THE

Medical Society of the State of North Carolina

[Adopted at the Fiftieth Annual Session, Hot Springs, N. C., June 3-5, 1903.

ARTICLE I.—Title of the Society.

The name and title of this organization shall be "The Medical Society of the State of North Carolina."

ARTICLE II.—Purposes of the Society.

The purpose of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of North Carolina, and to unite with similar organizations in other States to form the American Medical Association; with a view to the extension of medical knowledge, and to the advancement of medical science; to the elevation of the standard of medical education, and to the enactment and enforcement of just medical laws; to the promotion of friendly intercourse among physicians, and to the guarding and fostering of their material interests; and to the enlightenment and direction of public opinion in regard to the great problems of state medicine; so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life.

ARTICLE III.—Component Societies.

Component societies shall consist of those district and county medical societies which hold charters from this State Society.

ARTICLE IV.—Composition of the Society.

Section 1. This Society shall consist of Members, Delegates, Guests, Honorary Members, and Honorary Fellows.

Sec. 2. Members.—The members of this Society shall be the members of the component county medical societies.

Sec. 3. Delegates.—Delegates shall be those members who are elected in accordance with this Constitution and By-laws to represent their respective component county societies in the House of Delegates of this Society.

Sec. 4. Guests.—Any distinguished physician not a resident of this State may become a guest during any annual session upon invitation of the Society, or its Council, and shall be accorded the privilege of participating in all of the scientific work for that session.

Sec. 5. The Honorary Members shall consist of such regular physicians as have won distinction by their contributions to medical science; those elderly physicians who, prior to their retirement from practice,

have displayed a proper interest in the welfare of this Society, or who, by their example, have reflected credit and honor upon the profession. They must be nominated by the Council and receive a two-thirds vote of the members of the House of Delegates present at the meeting at which their names are presented for election. They shall be exempt from all dues and fines, and shall be entitled to all the privileges of the Society, except the right to vote and hold office.

SEC. 6. THE HONORARY FELLOWS shall consist of such physicians as have been members of this Society continuously for thirty years, and whose dues have been paid during that time. They shall receive a two-thirds vote of the members of the House of Delegates present at the meeting at which their names are proposed for promotion. They shall be exempt from all dues and fines, and shall be entitled to all the privileges enjoyed by active members in good standing.

ARTICLE V.—HOUSE OF DELEGATES.

The House of Delegates shall be the legislative and business body of the Society, and shall consist of (1) delegates elected by the component county societies, and (2) *ex officio* the officers of the Society as defined in this Constitution.

ARTICLE VI.—SECTIONS AND DISTRICT SOCIETIES.

The House of Delegates may provide for a division of the scientific work of the Society into appropriate sections, and for the organization of such councilor district societies as will promote the best interests of the profession, such societies to be composed exclusively of members of component county societies.

ARTICLE VII.—SESSIONS AND MEETINGS.

SECTION 1. The Society shall hold an Annual Session, during which there shall be held daily not less than two General Meetings, which shall be open to all registered members, delegates and guests.

SEC. 2. The time and place for holding each Annual Session shall be fixed by the House of Delegates.

ARTICLE VIII.—OFFICERS.

SECTION 1. The officers of this Society shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and ten Councilors.

SEC. 2. The President and Vice-Presidents shall be elected for a term of one year. The Secretary, Treasurer and Councilors shall be elected for terms of three years each. All of these officers shall serve until their successors are elected and installed.

SEC. 3. The officers of this Society shall be elected by ballot, a majority of the votes cast being necessary to elect, by the House of Delegates on the morning of the last day of the Annual Session, but no Delegate shall be eligible to any office named in the preceding section, except that of Councilor, and no person shall be elected to any such office who is not in attendance upon the Annual Session and who has not

been a member of the Society for the past three years. Any nominee for the office of President shall have been an active member of the Society for five years, including the year of his election, shall have attended two of three meetings immediately preceding his nomination, including the meeting at which he is nominated; and shall be a member in good standing at the time of his nomination.

ARTICLE IX.—The Board of Medical Examiners.

Section 1. The seven members of the "Board of Medical Examiners of the State of North Carolina" shall be elected by ballot for a term of six years, a majority of the votes cast being necessary to a choice. The election shall be held on the second day of the annual meeting, and the balloting shall continue until the entire number is elected.

Sec. 2. A vacancy occurring from any cause other than expiration of term of office, shall be filled by the board or a quorum thereof.

Sec. 3. The elective members of the State Board of Health, and of the State Board of Medical Examiners for Nurses, shall be elected by ballot on the second day of the session.

ARTICLE X.—Funds and Expenses.

Funds for meeting the expenses of the Society shall be arranged for by the House of Delegates by an equal per capita assessment upon each county society, to be fixed by the House of Delegates, by voluntary contribution, and from the profits of its publications. Funds may be appropriated by the House of Delegates to defray the expenses of the annual sessions, for publication, and for such other purposes as will promote the welfare of the Society and profession.

ARTICLE XI.—Referendum.

The general meeting of the Society may, by a two-thirds vote, order a general referendum upon any question pending before the House of Delegates, and the House of Delegates may, by a similar vote of its own members, or after a like vote of the general meeting, submit any such question to the membership of the Society for a final vote; and if the persons voting shall comprise a majority of all the members of the Society, a majority of such vote shall determine the question, and be binding upon the House of Delegates.

ARTICLE XII.—The Seal.

The Society shall have a common seal, with power to break, change or renew the same at pleasure.

ARTICLE XIII.—Amendments.

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the delegates registered at that annual session, provided that such amendment shall have been presented in open meeting at the previous annual session, and that it shall have been sent officially to each component county society at least two months before the session at which final action is to be taken.

By-Laws.

CHAPTER I.—Membership.

Section 1. All members of the component county societies shall be privileged to attend all meetings and take part in all of the proceedings of the annual sessions, and shall be eligible to any office within the gift of the Society.

Sec. 2. The name of a physician upon the properly certified roster of members or list of delegates, of a chartered county society which has paid its annual assessment, shall be *prima facie* evidence of his right to register at the annual session in the respective bodies of this Society: *Provided*, that licentiates of the State Board of Medical Examiners may, if the House of Delegates so elects, at the meeting of the Society at which they receive license, be entitled to register upon payment of the annual dues for that year, and be accorded all the privileges of other members for that year, the Secretary of the Society entering their names and so certifying to the Secretary of the county society where the said licentiates reside, but said licentiates desiring to continue membership in this Society must affiliate with their local county society.

Sec. 3. No person who is under sentence of suspension or expulsion from any component society of this Society or whose name has been dropped from its roll of members, shall be entitled to any of the rights or benefits of this Society, nor shall he be permitted to take any part in any of its proceedings until such time as he has been relieved of such disability.

Sec. 4. Each member in attendance at the annual session shall enter his name on the registration book, indicating the component society of which he is a member. When his right to membership has been verified by reference to the roster of his society, he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that session. No member or delegate shall take part in any of the proceedings of an annual session until he has complied with the provisions of this section.

CHAPTER II.—Annual and Special Sessions of the Society

Section 1. The Society shall hold an annual session at such time and place as has been fixed at the preceding annual session.

Sec. 2. Special sessions of either the Society or House of Delegates shall be called by the President at his discretion, or upon petition of twenty delegates.

CHAPTER III.—General Meetings.

Section 1. The general meetings shall include all registered members, delegates, and guests, who shall have equal right to participate in the proceedings and discussions; and, except guests and honorary members, to vote on pending questions. Each general meeting shall be presided over by the President, or in his absence or disability, or by his request,

by one of the Vice-Presidents. Before it, at such time and place as may have been arranged, shall be delivered the annual address of the President, and the annual orations, and the entire time of the session, so far as may be, shall be devoted to papers and discussions relating to scientific medicine.

SEC. 2. The general meeting shall have authority to create committees or commissions for scientific investigations of special interest and importance to the profession and public, and to receive and dispose of reports of the same; but any expense in connection therewith must first be approved of by the House of Delegates.

SEC. 3. Except by special vote, the order of exercises, papers and discussions, as set forth in the official program shall be followed from day to day until it has been completed.

SEC. 4. No address or paper before the Society, except those of the President, Orator and Essayist, shall occupy more than twenty minutes, in its delivery; and no member shall speak longer than five minutes nor more than once on any subject.

SEC. 5. All papers read before the Society shall be its property. Each paper shall be deposited with the Secretary when read, and if this is not done it shall not be published.

CHAPTER IV.—HOUSE OF DELEGATES.

SECTION 1. The House of Delegates shall meet annually at the time and place of the annual session of the Society, and shall so fix hours of meeting as not to conflict with the first general meeting of the Society, or with the meeting held for the address of the President and the annual orations, and so as to give delegates an opportunity to attend the other scientific proceedings and discussions so far as is consistent with their duties. But if the business interests of the Society and profession require, it may meet in advance, or remain in session after the final adjournment of the general meeting.

SEC. 2. Each component county society shall be entitled to send to the House of Delegates each year one delegate for every twenty-five members, and one for each major fraction thereof, but each county society holding a charter from this Society which has made its annual report and paid its assessment as provided in this Constitution and By-laws, shall be entitled to one delegate.

SEC. 3. A majority of the registered delegates shall constitute a quorum, and all of the meetings of the House of Delegates shall be open to members of the Society.

SEC. 4. It shall, through its officers, Council, and otherwise, give diligent attention to and foster the scientific work and spirit of the Society, and shall constantly study and strive to make each annual session a stepping-stone to future ones of higher interest.

SEC. 5. It shall consider and advise as to the material interests of the profession, and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure

and enforce all proper medical and public health legislation, and to diffuse popular information in relation thereto.

SEC. 6. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such county societies as already exist, and for organizing the profession in counties where societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse between physicians of the same locality, and shall continue these efforts until every physician in every county of the State who can be made reputable has been brought under Medical Society influence.

SEC. 7. It shall encourage post-graduate work in medical centers, as well as home study and research, and shall endeavor to have the results of the same utilized and intelligently discussed in the county societies. (With these ends in view, five years after the adoption of these By-laws, except by unanimous consent of the Committee on Scientific Work, no voluntary paper shall be placed upon the annual program, or be heard in the Association, which has not first been read in the county society of which the author is a member.)

SEC. 8. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-laws of that body, in such a manner that not more than one-half of the delegates shall be elected in any one year.

SEC. 9. It shall, upon application, provide and issue charters to county societies organized to conform to the spirit of this Constitution and By-laws.

SEC. 10. In sparsely settled sections, it shall have authority to organize the physicians of two or more counties into societies, to be designated by hyphenating the names of two or more counties, so as to distinguish them from district and other classes of societies, and these societies, when organized and chartered, shall be entitled to all the privileges and representation provided herein for county societies, until such counties may be organized separately.

SEC. 11. It may divide the counties of the State into ten councilor districts, and, when the best interest of the Society and profession will be promoted thereby, organize in each a district medical society, to meet midway between the annual sessions of this Society, and members of the chartered county societies, and none others, shall be members in such district societies. (When so organized from the presidents of such district societies shall be chosen the Vice-Presidents of this Society, and the presidents of the county societies of the district shall be the vice-presidents of such district societies.)

SEC. 12. It shall have authority to appoint committees for special purposes from among members of the Society who are not members of the House of Delegates, and such committees may report to the House of Delegates in person, and may participate in the debate thereon.

SEC. 13. It shall approve all memorials and resolutions issued in the name of the Society before the same shall become effective.

SEC. 14. It shall present a summary of its proceedings to the last general meeting of each annual session, and shall publish the same in the transactions.

CHAPTER V.—ELECTION OF OFFICERS.

SECTION 1. All elections shall be by secret ballot, and a majority of the votes cast shall be necessary to elect: *Provided*, that when only one name is to be balloted for, *the Society* may suspend the rules and declare the same elected by consent.

SEC. 2. The House of Delegates, on the first day of the annual sessions, shall select a Committee on Nominations, consisting of ten delegates, no two of whom shall be from the same councilor district. It shall be the duty of this committee to consult with the members of the Society, and to hold one or more meetings, at which the best interests of the Society and of the profession of the State for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the House of Delegates in the shape of a ticket containing the name of one member for the office of President, and one member for each of the other offices to be filled at that annual session.

SEC. 3. The report of the Nominating Committee and the election of officers shall be the first order of business of the House of Delegates after the reading of the minutes *on the morning of the last day* of the general session.

SEC. 4. Nothing in this Article shall be construed to prevent additional nominations being made by members of the House of Delegates.

SEC. 5. Any person known to have solicited votes for or sought any office within the gift of this Society, shall be ineligible for any office for two years.

CHAPTER VI.—DUTIES OF OFFICERS.

SECTION 1. The President shall preside at all meetings of the Society and of the House of Delegates; shall appoint all committees not otherwise provided for; shall deliver an annual address at such time as may be arranged; shall give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and, as far as practicable, shall visit by appointment the various sections of the State and assist the councilors in building up the county societies, and in making their work more practical and useful.

SEC. 2. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of his death, resignation or removal, the Council shall select one of the Vice-Presidents to succeed him.

SEC. 3. The Treasurer shall give bond for the trust reposed in him whenever the House of Delegates shall deem it requisite. He shall demand and receive all funds due the Society, together with the bequests and donations. He shall, under the direction of the House of Delegates, sell or lease any estate belonging to the Society, and execute the necessary papers; and shall, in general, subject to such direction, have the care and management of the fiscal affairs of the Society. He shall pay money out of the treasury only on a written order of the President, countersigned by the Secretary; he shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his doings and of the state of the funds in his hands. He shall charge upon his books the assessments against each component county society at the end of the fiscal year; he shall collect and make proper credits for the same, and perform such other duties as may be assigned to him.

SEC. 4. The Secretary, acting with the Committee on Scientific Work, shall prepare and issue the programs for and attend all meetings of the Society, and of the House of Delegates, and he shall keep minutes of their respective proceedings in separate record books. He shall be custodian of all record books and papers belonging to the Society, except such as properly belong to the Treasurer, and shall keep account of and promptly turn over to the Treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members and delegates at the annual sessions. He shall keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his county society. In so far as it is in his power, he shall use the printed matter, correspondence and influence of his office to aid the councilors in the organization and improvement of the county societies, and in the extension of the power and usefulness of this Society. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall act as Chairman of the Committees on Scientific Work and on Publication. He shall employ such assistants as may be ordered by the Council or the House of Delegates. He shall annually make a report of his doings to the House of Delegates.

In order that the Secretary may be enabled to give that amount of time to his duties which will permit of his becoming proficient, it is desirable that he should receive some compensation. The amount of his salary shall be fixed by the House of Delegates.

CHAPTER VII.—COUNCILOR DISTRICTS.

SECTION 1. To facilitate the more perfect organization of the medical profession, the State of North Carolina is hereby divided by counties into ten councilor districts, as follows:

First District.—Currituck, Camden, Pasquotank, Perquimans, Gates, Chowan, Washington, Tyrrell, Dare and Hyde.

Second District.—Hertford, Martin, Pitt, Bertie, Beaufort, Lenoir, Jones, Craven, Pamlico and Carteret.

Third District.—New Hanover, Pender, Onslow, Duplin, Bladen, Sampson, Columbus and Brunswick.

Fourth District.—Northampton, Halifax, Nash, Edgecombe, Johnston, Wilson, Wayne and Greene.

Fifth District.—Cumberland, Robeson, Scotland, Richmond, Montgomery, Moore, Harnett and Chatham.

Sixth District.—Wake, Franklin, Warren, Vance, Granville, Person, Caswell, Alamance, Orange and Durham.

Seventh District.—Anson, Union, Stanly, Mecklenburg, Cabarrus, Lincoln, Gaston, Cleveland and Rutherford.

Eighth District.—Rockingham, Guilford, Randolph, Forsyth, Stokes, Surry, Yadkin, Alleghany, Wilkes and Ashe.

Ninth District.—Davidson, Davie, Rowan, Iredell, Alexander, Catawba, Caldwell, Watauga, Mitchell and Burke.

Tenth District.—Buncombe, Yancey, McDowell, Madison, Polk, Henderson, Haywood, Transylvania, Jackson, Swain, Macon, Graham, Clay and Cherokee.

CHAPTER VIII.—Council.

Section 1. The Council shall hold daily meetings during the annual session of the Association and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet on the last day of the annual session of the Association for reorganization and for the outlining of work for the ensuing year. At this meeting it shall elect a Chairman and Secretary, and it shall keep a permanent record of its proceedings. It shall, through its Chairman, make an annual report to the House of Delegates at such time as may be provided.

Sec. 2. Each Councilor shall be organizer, peacemaker and censor for his district. He shall visit each county in his district at least once a year for the purpose of organizing component societies where none exist, for inquiring into the condition of the profession, and for improving and increasing the zeal of the county societies and their members. He shall make an annual report of his doings, and of the condition of the profession of each county in his district to each annual session of the House of Delegates. The necessary traveling expenses incurred by such Councilor in the line of the duties herein imposed may be allowed by the House of Delegates upon a proper itemized statement, but this shall not be construed to include his expense in attending the annual session of the Society.

Sec. 3. Collectively the Council shall be the Board of Censors of the Society. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component societies, or to this Society. All questions of an ethical nature brought before the House of Delegates or the general meeting

shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or of a county society, upon which an appeal is taken from the decision of an individual councilor. Its decision in all such cases shall be final.

SEC. 4. The Council shall have the right to communicate the views of the profession and of the Society in regard to health, sanitation and other important matters to the public and the lay press. Such communications shall be officially signed by the Chairman and Secretary of the Council, as such.

CHAPTER IX.—COMMITTEES.

SECTION 1. The standing committees shall be as follows:

A Committee on Scientific Work.

A Committee on Public Policy and Legislation.

A Committee on Publication.

A Committee on Nominations.

A Committee on Finance.

A Committee on Obituaries.

A Committee on Arrangements, and such other committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.

SEC. 2. The Committee on Scientific Work shall consist of three members, of which the Secretary shall be a member and Chairman, and shall determine the character and scope of the scientific proceedings of the Society for each session, subject to the instructions of the House of Delegates or of the Society, or to the provisions of the Constitution and By-laws. Thirty days previous to each annual session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be presented, which shall be adhered to by the Society as nearly as practicable.

SEC. 3. The Committee on Public Policy and Legislation shall consist of three members and the President and Secretary. Under the direction of the House of Delegates it shall represent the Society in securing an enforcing legislation in the interest of public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence of the profession to promote the general influence in local, State and national affairs and elections. Its work shall be done with the dignity becoming a great profession, and with that wisdom which will make effective its power and influence. It shall have authority to be heard before the entire Society upon questions of great concern at such time as may be arranged during the annual session.

SEC. 4. The Committee on Publication shall consist of three members, of which the Secretary shall be one and Chairman, and shall have referred to it all reports on scientific subjects, and all scientific papers

and discussions heard before the Society. It shall be empowered to curtail or abstract papers and discussions, and any paper referred to it which may not be suitable for publication in the transactions may be returned to the author. The committee shall have authority to arrange for the publication and distribution of the transactions after receiving competitive bids, and shall use diligence in getting them into the hands of the members. All papers read before the Society shall be the property of the Society.

Sec. 5. The Committee on Nominations shall be appointed and perform its duties in accordance with the provisions of chapter 5, section 2, of these By-laws. They shall also nominate an Orator and Essayist, a Leader of Debate, a Committee on Scientific Work, a Committee on Public Policy and Legislation, a Committee on Publication, a Committee on Obituaries, a Committee on Finance, one member of the Committee of Arrangements, delegates to the American Medical Association, the Virginia Medical Society, the South Carolina Medical Association, and to such other bodies as the Society may determine. They shall also each third year nominate a board of ten councilors.

Sec. 6. The Committee on Finance, to consist of three members, shall examine the accounts of the Treasurer and report to the Society, making suggestions as to the amount of assessments for the coming year, the remuneration of the Secretary and the Treasurer, and such other suggestions concerning the finances of the Society as they may think proper. The Committee on Obituaries to consist of three members, shall report to the general meeting of the Society the names of all members dying during the past year, with other data appropriate for memorial publication.

Sec. 7. The Committee of Arrangements shall consist of one member elected by the House of Delegates each year, and two members elected by the county society in the territory in which the annual session is to be held. It shall, by committees of its own selection, provide suitable accommodations for the meeting places of the Society and of the House of Delegates, the Board of Medical Examiners, and of their respective committees, and shall have general charge of all the arrangements. Its Chairman shall report an outline of the arrangements to the Secretary for publication in the program, and shall make additional announcements during the session as occasion may require.

CHAPTER X.—Of the Sections and Voluntary Communications.

Section 1. The newly-installed President shall, at the last session of each meeting, appoint a member to serve as Chairman of each of the following sections, to wit: Anatomy and Surgery, Materia Medica and Therapeutics, Practice of Medicine, Physiology and Chemistry, Obstetrics, Gynecology, Medical Jurisprudence and State Medicine, Pathology and Microscopy, and Railway Surgery.

Sec. 2. At any time after the meeting the Chairman of each section

may appoint three such members as he may select as his assistants to work up such items as he may designate, confining himself to the general advancement in his section.

SEC. 3. The Chairmen of sections shall send in to the Secretary, not later than thirty days previous to each meeting of the Society, the titles of papers to be presented by themselves and their assistants, to be used by the Committee on Scientific Work in making a program for the meeting.

SEC. 4. No paper shall be read before the Society unless the author be present, unless his absence be due to some unavoidable circumstance. A paper presented by proxy may be referred to the Committee on Publication.

SEC. 5. No paper shall be referred to the Committee on Publication until it has been placed in the hands of the Secretary; and the Secretary shall not return any paper accepted by the Society without the consent of the Society, and then he shall take a receipt for the same.

SEC. 6. No paper shall be received by or read before this Society that has been presented to any other society, excepting only a component society of this Society, or that has been offered for publication in any journal; and in the case of any paper accepted the author is supposed to have invested with the Society all rights to its ownership.

SEC. 7. No paper shall be published in the transactions of this Society unless approved by the Committee on Publication; and any paper rejected by said committee shall be returned to the author through the Secretary of the Society.

SEC. 8. It is to be understood that the Society is not to be considered as endorsing all the views and opinions advanced by the authors of papers published in the transactions of the Society.

CHAPTER XI.—ASSESSMENTS AND EXPENDITURES.

SECTION 1. An assessment of two dollars per capita on the membership of the component societies is hereby made the annual dues of this Society, which amount shall be collected by the Secretary of each county society, from each of its members, on or before the first day of March, and forwarded to the Treasurer of the State Society before the first day of April in each year. The secretary of each county society shall forward a statement of its assessment, together with its roster of all officers and members, list of delegates and list of nonaffiliated physicians of the county, to the Secretary of this Society on or before the first day of April in each year.

SEC. 2. Any county society which fails to pay its assessment, or make the reports required, on or before the date above stated, shall be held as suspended, and none of its members or delegates shall be permitted to participate in any of the business or proceedings of the State Society, or of the House of Delegates, or receive the volume of transactions, until such requirements have been met.

SEC. 3. All motions or resolutions appropriating money shall specify a definite amount, or so much thereof as may be necessary for the purpose indicated, and must be approved by the Council and House of Delegates on a call of the ayes and noes.

CHAPTER XII.—RULES OF CONDUCT.

The principles set forth in the Declaration of Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

CHAPTER XIII.—RULES OF ORDER.

The deliberations of this Society shall be governed by parliamentary usage as contained in Robert's Rules of Order, unless otherwise determined by a vote of its respective bodies.

CHAPTER XIV.—COUNTY SOCIETIES.

SECTION 1. All county societies now in affiliation with the State Society, or those that may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and By-laws, shall, upon application to the House of Delegates, receive a charter from and become a component part of this Society.

SEC. 2. As rapidly as can be done after the adoption of this Constitution and By-laws, a medical society shall be organized in every county in the State in which no component society exists, and charters shall be issued thereto.

SEC. 3. Charters shall be issued only upon approval of the House of Delegates, and shall be signed by the President and Secretary of this Society. The House of Delegates shall have authority to revoke the charter of any component county society whose actions are in conflict with the letter or spirit of this Constitution and By-laws.

SEC. 4. Only one component medical society shall be chartered in any county. Where more than one county society exists, friendly overtures and concessions shall be made, with the aid of the Councilor for the district, if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

SEC. 5. Each county society shall judge of the qualification of its own members, but, as such societies are the only portals to this Society and to the American Medical Association, every reputable and legally registered physician who is practicing, or who will agree to practice nonsectarian medicine, shall be entitled to membership. Before a charter is issued to any county society, full and ample notice and opportunity shall be given to every such physician in the county to become a member.

SEC. 6. Any physician who may feel aggrieved by the action of the society of his county in refusing him membership, or in suspending

or expelling him, shall have the right of appeal to the Council, and to the House of Delegates.

SEC. 7. In hearing appeals the Council may admit oral or written evidence, as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a board and as individual councilors in district and county work, efforts at conciliation and compromise shall precede all such hearings.

SEC. 8. When a member in good standing in a component society moves to another county in this State, his name, upon request, shall be transferred without cost to the roster of the county society into whose jurisdiction he moves.

SEC. 9. A physician living on or near a county line may hold his membership in that county most convenient for him to attend, on permission of the society in whose jurisdiction he resides.

SEC. 10. Each county society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county; and systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it embraces every qualified physician in the county.

SEC. 11. Frequent meetings shall be encouraged, and the most attractive programs arranged that are possible. The younger members shall be especially encouraged to do post-graduate and original research work, and to give the society the first benefit of such labors. Official position and other preferments shall be unstintingly given to such members.

SEC. 12. At some meeting in advance of the annual session of this Society prior to the first day of April, each county society shall elect a delegate or delegates with alternates, to represent it in the House of Delegates of this Society in the proportion of one delegate to each twenty-five members or major fraction thereof, and the secretary of the society shall send a list of such delegates with alternates to the Secretary of this Society at least ten days before the annual sessions.

SEC. 13. The secretary of each county society shall keep a roster of its members, and a list of the nonaffiliated registered physicians of the county, in which shall be shown the full name, address, college, and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. He shall furnish an official report containing such information, upon blanks supplied him for the purpose, to the Secretary of this Society before the first day of April, in each year, and at the same time that the dues accruing from the annual assessment are sent in. In keeping such roster, the secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his annual report he shall be certain to account for every physician who has lived in the county during the year.

CHAPTER XV.—Order of Business.

Section 1. General Meetings.

The President, or, in his absence, one of the Vice-Presidents in the order of their rank, shall call the Society to order, or in the absence of all these officers, a presiding officer shall be chosen by a majority of the members present.

Address of Welcome. Response.

Any business requiring early attention may be introduced by permission and without discussion referred to the Council, the House of Delegates, or the appropriate committee.

The President's Address.

Reports of Committees.

Reports from the House of Delegates.

Reports from the Council.

Written communications upon medical subjects may be read and discussed. This shall include reports from sections as arranged each year by the program.

The Annual Oration.

The Annual Essay.

The Annual Debate.

Oral Communications and Clinical Reports read and discussed.

Final Reports from the Council.

Final Reports from the House of Delegates.

Final Reports from Committees.

Report to the General Meeting from the House of Delegates appointing the time and place of next session.

Report from the House of Delegates of the Election of Officers and Committees.

Appointment of Chairmen of Sections by President.

Adjournment.

Sec. 2. The House of Delegates.

The President, or, in his absence, one of the Vice-Presidents in the order of their rank, shall call the Society to order, or in the absence of all these officers a presiding officer shall be chosen by a majority of the members present.

Roll-call.

The President's Message.

Report of Committee on Credentials.

Reports of Committees.

Reports of Officers.

Reports of the Council.

Communications from the General Meeting of the Society.

Reports from the County Societies.

Appointment of Committee on Nominations.

New business.

General Discussion of Measures for the Advancement of the Profession.

Reports of Committees.
Election of Officers and Committees.
Selection of Place and Time of Next Meeting.
Unfinished Business.
Adjournment.

(While there may at times appropriately be a variation from the details of the above outline of business procedure, it is the intention of these By-laws to so arrange that the work other than the purely scientific part of the Society's proceedings be done in the Council and House of Delegates, and the general meetings of the Society be devoted exclusively to scientific work.)

CHAPTER XVI.—AMENDMENTS.

These By-laws may be amended at any annual session by a majority vote of all the delegates present at that session, after the amendment has lain upon the table for one day.

(Extract from the proceedings of the American Medical Association at the annual session in New Orleans May, 1903.)

Report of the Committee on Medical Ethics.

Dr. E. Eliot Harris, New York, read the following report:

To the President and Members of the House of Delegates of the American Medical Association:

Your enlarged Committee on Medical Ethics, consisting of the Special Committee, and one delegate from each State, have unanimously adopted the following report, entitled the "Principles of Medical Ethics of the American Medical Association," which is herewith submitted.

The following report of the Special Committee shall be printed as an explanatory preface to the Principles of Medical Ethics of the American Medical Association:

Gentlemen.—Your committee has given extended and careful thought to the proposed revision of the Code of Medical Ethics referred to it for consideration. As you will note on reference to the caption of the report the word "Code" has been eliminated, and the expression "Principles of Medical Ethics of the American Medical Association" adopted as adequately descriptive. In reference to this change, it is proper to say that such action on its part is based on the idea that the American Medical Association may be conceived to occupy some such relation to the constituent State associations as the United States, through its Constitution, holds to the several States. The committee, for this reason, regards it as wiser to formulate the principles of medical ethics without definite reference to "Code" or penalties, thus leaving the respective

States to form such Code, and establish such rules as they may regard to be fitting and proper, for regulating the professional conduct of their members, provided, of course, that in doing so there shall be no infringement on the established ethical principles of this Association. The committee regard as wise and well intended to facilitate the business of the parent, or organization, and promote its harmony, this course which leaves to the State Association large discretionary powers concerning membership and other admittedly State affairs. Your committee has retained, to a large extent, the phraseology of the existing Code, while aiming at condensation of expression and a better understanding of some of its statements. The report of the committee has been reached unanimously, without dissension or distrust on the part of its members, each aiming to formulate a result based on principle alone, and without regard to any past or present disagreements or misunderstandings whatsoever; such being the case, the committee invites your candid and unprejudiced attention to the results of its labor, feeling that at least some good has been accomplished.

Respectfully submitted,

E. Eliot Harris, *Chairman*,
William H. Welch,
T. J. Happel,
Joseph D. Bryant.

The report of the committee was unanimously adopted.

CHAPTER XII.—RULES OF CONDUCT.

"The principles set forth in the Declaration of Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public."—Constitution and By-laws Medical Society of the State of North Carolina, adopted at Hot Springs, N. C., June 2, 1903.

Principles of Medical Ethics.

(Adopted at the annual session in New Orleans, May, 1903.)

The American Medical Association promulgates as a suggestive and advisory document, the following:

CHAPTER I.—The Duties of Physicians to Their Patients.

Section 1. Physicians should not only be ever ready to obey the calls of the sick and the injured, but should be mindful of the high character of their mission and of the responsibilities they must incur in the discharge of momentous duties. In their ministrations they should never forget that the comfort, the health, and the lives of those

entrusted to their care, depend on skill, attention and fidelity. In deportment they should unite tenderness, cheerfulness and firmness, and thus inspire all sufferers with gratitude, respect and confidence. These observances are the more sacred because, generally, the only tribunal to adjudge penalties for unkindness, carelessness or neglect is their own conscience.

Sec. 2. Every patient committed to the charge of a physician should be treated with attention and humanity, and reasonable indulgence should be granted to the caprices of the sick. Secrecy and delicacy should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted, in their professional visits, should be guarded with the most scrupulous fidelity and honor.

Sec. 3. The obligation of secrecy extends beyond the period of professional services; none of the privacies of individual or domestic life, no infirmity of disposition, or flaw of character observed during medical attendance should ever be divulged by physicians, except when imperatively required by the laws of the State. The force of the obligation of secrecy is so great that physicians have been protected in its observance by courts of justice.

Sec. 4. Frequent visits to the sick are often requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, and to meet promptly every change which may occur. Unnecessary visits are to be avoided, as they give undue anxiety to the patient; but to secure the patient against irritating suspense and disappointment the regular and periodical visits of the physician should be made as nearly as possible at the hour when they may be reasonably expected by the patient.

Sec. 5. Ordinarily, the physician should not be forward to make gloomy prognostications, but should not fail, on proper occasions, to give timely notice of dangerous manifestations to the friends of the patient, and even to the patient, if absolutely necessary. This notice, however, is at times so peculiarly alarming when given by the physician that its deliverance may often be preferably assigned to another person of good judgment.

Sec. 6. The physician should be a minister of hope and comfort to the sick, since life may be lengthened or shortened not only by the acts but by the words or manner of the physician, whose solemn duty is to avoid all utterances and actions having a tendency to discourage and depress the patient.

Sec. 7. The medical attendant ought not to abandon a patient because deemed incurable, for continued attention may be highly useful to the sufferer and comforting to the relatives, even in the last period of the fatal malady by alleviating pain and by soothing mental anguish.

Sec. 8. The opportunity which a physician has of promoting and strengthening the good resolutions of patients suffering under the consequences of evil conduct ought never to be neglected. Good counsels,

or even remonstrances, will give satisfaction, not offense, if they be tactfully proffered and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

CHAPTER II.—The Duties of Physicians to Each Other and to the Profession at Large.

ARTICLE I.—DUTIES FOR THE SUPPORT OF PROFESSIONAL CHARACTER.

SECTION 1. Every one, on entering the profession, and thereby becoming entitled to full professional fellowship, incurs an obligation to uphold its dignity and honor, to exalt its standing and to extend the bounds of its usefulness. It is inconsistent with the principles of medical science and it is incompatible with honorable standing in the profession for physicians to designate their practice as based on an exclusive dogma, or a sectarian system of medicine.

SEC. 2. The physician should observe strictly such laws as are instituted for the government of the members of the profession; should honor the fraternity as a body; should endeavor to promote the science and art of medicine, and should entertain a due respect for those seniors who, by their labors, have contributed to its advancement.

SEC. 3. Every physician should identify himself with the organized body of his profession as represented in the community in which he resides. The organization of local or county medical societies, where they do not exist, should be effected, so far as practicable. Such county societies, constituting as they do, the chief element of strength in the organization of the profession, should have the active support of their members, and should be made instruments for the cultivation of fellowship, for the exchange of professional experience, for the advancement of medical knowledge, for the maintenance of ethical standards, and for the promotion in general of the interests of the profession and the welfare of the public.

SEC. 4. All county medical societies thus organized ought to place themselves in affiliation with their respective State associations, and these, in turn, with the American Medical Association.

SEC. 5. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to patients. It is due to the patients, as without it their respect and confidence can not be commanded, and to the profession because no scientific attainments can compensate for the want of correct moral principles.

SEC. 6. It is incumbent on physicians to be temperate in all things, for the practice of medicine requires the unremitting exercise of a clear and vigorous understanding; and in emergencies—for which no physician should be unprepared—a steady hand, an acute eye, and an

unclouded mind are essential to the welfare and even to the life of a human being.

SEC. 7. It is incompatible with honorable standing in the profession to resort to public advertisements or private cards, inviting the attention of the persons affected with particular diseases; to promise radical cures; to publish cases of operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success, or to employ any of the other methods of charlatans.

SEC. 8. It is equally derogatory to professional character for physicians to hold patents for any surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances; to assist unqualified persons to evade the legal restrictions governing the practice of medicine; or to dispense, or promote the use of secret medicines, for if such nostrums are of real efficacy, any concealment regarding them is inconsistent with beneficence and professional liberality, and if mystery alone give them public notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines or other substances used therapeutically.

ARTICLE II.—PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

SECTION 1. Physicians should not, as a general rule, undertake the treatment of themselves, nor of members of their family. In such circumstances, they are peculiarly dependent on each other; therefore, kind offices and professional aid should always be cheerfully and gratuitously afforded. These visits ought not, however, to be obtrusively made, as they may give rise to embarrassment, or interfere with that free choice on which such confidence depends.

SEC. 2. All practicing physicians and their immediate family dependents are entitled to the gratuitous services of any one or more of the physicians residing near them.

SEC. 3. When a physician is summoned from a distance to the bedside of a colleague in easy financial circumstances, a compensation, proportionate to traveling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labor, should be made by the patient or relatives.

SEC. 4. When more than one physician is attending another, one of the number should take charge of the case, otherwise the concert of thought and action so essential to wise treatment can not be assured.

SEC. 5. The affairs of life, the pursuit of health and the various accidents and contingencies to which a physician is peculiarly exposed, sometimes require the temporary withdrawal of this physician from daily professional labor, and the appointment of a colleague to act for a specified time. The colleague's compliance is an act of courtesy

which should always be performed with the utmost consideration for the interest and character of the family physician.

ARTICLE III.—THE DUTIES OF PHYSICIANS IN REGARD TO CONSULTATIONS.

SECTION 1. The broadest dictates of humanity should be obeyed by physicians whenever and wherever their services are needed to meet the emergencies of disease or accident.

SEC. 2. Consultations should be promoted in difficult cases, as they contribute to confidence and more enlarged views of practice.

SEC. 3. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations, and this is generally practicable, for society has been so considerate as to allow the plea of a professional engagement to take precedence over all others.

SEC. 4. As professional engagements may sometimes cause delay in attendance, the physician who first arrives should wait for a reasonable time, after which the consultation should be considered as postponed to a new appointment.

SEC. 5. In consultations no insincerity, rivalry, or envy should be indulged in; candor, probity, and all due respect should be observed toward the physician in charge of the case.

SEC. 6. No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered which were not the result of previous deliberation and concurrence.

SEC. 7. No decision should restrain the attending physician from making such consequent variations in the mode of treatment as any unexpected change in the character of the case may demand. But at the next consultation reasons for the variations should be stated. The same privilege, with its obligation, belongs to the consultant when sent for in an emergency during the absence of the family physician.

SEC. 8. The attending physician at any time may prescribe for the patient; not so the consultant, when alone, except in a case of emergency or when called from a considerable distance. In the first instance the consultant should do what is needed, and in the second, should do no more than make an examination of the patient, and leave a written opinion, under seal, to be delivered to the attending physician.

SEC. 9. All discussions in consultation should be held as confidential. Neither by words nor by manner should any of the participants in a consultation assert, or intimate, that any part of the treatment pursued did not receive his assent.

SEC. 10. It may happen that two physicians can not agree in their views of the nature of a case and of the treatment to be pursued. In the event of such disagreement a third physician should, if practicable, be called in. None but the rarest and most exceptional circumstances would justify the consultant in taking charge of the case. He should not do so merely on the solicitation of the patient or friends.

SEC. 11. A physician who is called in consultation, should observe the most honorable and scrupulous regard for the character and standing of the attending physician, whose conduct of the case should be justified, as far as can be, consistently with the conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in the attending physician.

ARTICLE IV.—DUTIES OF PHYSICIANS IN CASES OF INTERFERENCE.

SECTION 1. Medicine being a liberal profession, those admitted to its ranks should found their expectations of practice especially on the character and the extent of their medical education.

SEC. 2. The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder, nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician.

SEC. 3. The same circumspection should be observed when, from motives of business or friendship, a physician is prompted to visit a person who is under the direction of another physician. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

SEC. 4. A physician ought not to take charge of, or prescribe for a patient who has recently been under the care of another physician, in the same illness, except in case of a sudden emergency, or in consultation with the physician previously in attendance, or when that physician has relinquished the case or has been dismissed in due form.

SEC. 5. The physician acting in conformity with the preceding section should not make damaging insinuations regarding the practice previously adopted, and indeed, should justify it if consistent with truth and probity; for it often happens that patients become dissatisfied when they are not immediately relieved, and, as many diseases are naturally protracted, the seeming want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

SEC. 6. When a physician is called to an urgent case, because the family attendant is not at hand, unless assistance in consultation is desired, the former should resign the care of the patient immediately on the arrival of the family physician.

SEC. 7. It often happens, in cases of sudden illness, and of accidents and injuries, owing to the alarm and anxiety of friends, that several physicians are simultaneously summoned. Under these circumstances, courtesy should assign the patient to the first who arrives, and who, if necessary, may invoke the aid of some of those present. In such

a case, however, the acting physician should request that the family physician be called, and should withdraw unless requested to continue in attendance.

SEC. 8. Whenever a physician is called to the patient of another physician during the enforced absence of that physician, the case should be relinquished on the return of the latter.

SEC. 9. A physician while visiting a sick person in the country, may be asked to see another physician's patient because of a sudden aggravation of the disease. On such an occasion the immediate needs of the patient should be attended to and the case relinquished on the arrival of the attending physician.

SEC. 10. When a physician who has been engaged to attend an obstetric case is absent, and another is sent for, delivery being accomplished during the vicarious attendance, the acting physician is entitled to the professional fee, but must resign the patient on the arrival of the physician first engaged.

ARTICLE V.—DIFFERENCES BETWEEN PHYSICIANS.

SECTION 1. Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such unfortunate cases occur and can not be immediately adjusted, they should be referred to the arbitration of a sufficient number of impartial physicians.

SEC. 2. A peculiar reserve must be maintained by physicians toward the public in regard to some professional questions, and as there exist many points in medical ethics and etiquette through which the feelings of physicians may be painfully assailed in their intercourse, and which can not be understood or appreciated by general society, neither the subject-matter of their differences nor the adjudication of the arbitrators should be made public.

ARTICLE VI.—COMPENSATION.

SECTION 1. By the members of no profession are eleemosynary services more liberally dispensed than by the medical, but justice requires that some limits should be placed to their performance. Poverty, mutual professional obligations and certain of the public duties named in sections 1 and 2 of chapter III, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by the rich, or by societies for mutual benefit, for life insurance, or for analogous purposes, nor any profession or occupation can be admitted to possess such privilege.

SEC. 2. It can not be justly expected of physicians to furnish certificates of inability to serve on juries, or to perform militia duty; to testify to the state of health of persons wishing to insure their lives, obtain pensions, or the like, without due compensation. But to persons in indigent circumstances such services should always be cheerfully and freely accorded.

SEC. 3. Some general rules should be adopted by the physicians in every town or district relative to the minimum pecuniary acknowledgment from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

SEC. 4. It is derogatory to professional character for physicians to pay or offer to pay commissions to any person whatsoever, who may recommend to them patients requiring general or special treatment or surgical operations. It is equally derogatory to professional character for physicians to solicit or to receive such commissions.

CHAPTER III.—THE DUTIES OF THE PROFESSION TO THE PUBLIC.

SECTION 1. As good citizens it is the duty of physicians to be very vigilant for the welfare of the community, and to bear their part in sustaining its laws, institutions and burdens; especially should they be ready to cooperate with the proper authorities in the administration, and the observance of sanitary laws and regulations, and they should also be ever ready to give counsel to the public in relation to subjects, especially appertaining to their profession, as on questions of sanitary police, public hygiene and legal medicine.

SEC. 2. It is the province of physicians to enlighten the public in regard to quarantine regulations; to the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger and to continue their labors for the alleviation of the suffering people, even at the risk of their own lives.

SEC. 3. Physicians when called on by legally constituted authorities, should always be ready to enlighten inquests and courts of justice on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poison, or other violent means, and various other subjects embraced in the science of medical jurisprudence. It is but just, however, for them to expect due compensation for their services.

SEC. 4. It is the duty of physicians, who are frequent witnesses of the great wrongs committed by charlatans, and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects, and to make known the injuries sustained by the unwary from the devices and pretensions of artful impostors.

SEC. 5. It is the duty of physicians to recognize, and by legitimate patronage to promote the profession of pharmacy, on the skill and proficiency of which depends the reliability of remedies, but any pharmacist who, although educated in his own profession, is not a qualified physician, and who assumes to prescribe for the sick, ought not to receive such countenance and support. Any druggist or pharmacist who dispenses deteriorated or sophisticated drugs, or who substitutes one remedy for another designated in a prescription, ought thereby to forfeit the recognition and influence of physicians.

CONSTITUTION AND BY-LAWS

FOR

COUNTY MEDICAL SOCIETIES.

(Approved by the Medical Society of the State of North Carolina at the annual session in Hot Springs, N. C., June 2, 1903.)

Introductory.

The Committee on Organization of the American Medical Association, which was continued at the Saratoga meeting, herewith submits a tentative Constitution and By-laws for county societies, and in doing so desires to say, that while the provisions it contains are deemed essential to good organization, some of the provisions are suggestive and educational in character and may not be applicable to every county or section. In such cases these may be omitted, or others more appropriate substituted for them. In any event, the high ideals for the individual physician, and the spirit of courtesy and kindness which should govern him in his dealings with his professional neighbors, are here set forth for thought and consideration.

The Committee is not a unit as to whether there should be charged an admission fee as called for in section 1, chapter V, of the By-laws, but the majority of the committee believes that this is the correct principle, for the average individual does not appreciate that which he gets for nothing, and furthermore, that if an admission fee is charged the individual will not be as likely to drop out of the Society, as if he obtained his membership for nothing. The committee advises, however, that in organizing a County Society, or before adopting the new Constitution, that the charter shall be open for all in the county who are eligible and admit such charter members without the admission fee.

We close this report by making a quotation from our report when we submitted the Constitution and By-laws for State societies:

Much in the By-laws submitted may be regarded as "preaching," but it is inserted advisedly, with the sole object of arousing in the minds of each Medical Society member a desire for the accomplishment of greater ends than has been permitted by the customs and forms of the past. The committee earnestly desires that the State committees will continue the work of perfecting organization, actuated by that love for our profession that its ideals demand. With the medical profession well organized, medical science will more rapidly step to its appointed high place, and the profession which lives in its atmosphere will have that power and respect in the community that is its right.

J. N. McCormack, Bowling Green, Ky.,
P. Maxwell Foshay, Cleveland, Ohio,
George H. Simmons, Chicago, Illinois,
Committee.

Constitution.

ARTICLE I.—NAME AND TITLE OF THE SOCIETY.

The name and title of this organization shall be the ..... County Medical Society.

ARTICLE II.—PURPOSES OF THE SOCIETY.

The purpose of this Society shall be to bring into one organization the physicians of ..... County; so that by frequent meetings and full and frank interchange of views they may secure such intelligent unity and harmony in every phase of their labor as will elevate and make effective the opinions of the profession in all scientific, legislative, public health, material and social affairs, to the end that the profession may receive that respect and support within its own ranks and from the community to which its honorable history and great achievements entitle it; and with other county societies to form the Medical Society of the State of North Carolina, and through it, with other State associations, to form and maintain the American Medical Association.

ARTICLE III.—ELIGIBILITY.

Every legally registered physician residing and practicing in ..... County, who is of good moral and professional standing and who does not practice or claim to practice sectarian medicine, shall be eligible for membership.

ARTICLE VI.—MEETINGS.

Regular meetings shall be held at such time and place as may be determined by the Society. Special meetings may be called by the President on a written request of five members. Calls for special meetings shall state the object of such meeting, and no business except that stated in the call shall be transacted at such meeting.

ARTICLE V.

The officers of this Society shall consist of a President, Vice-President, Secretary, Treasurer, Delegates, and Board of (three) Censors. These officers, except the Delegates and Board of Censors, shall be elected annually for a term of one year. Delegates shall be elected for two years, or in accordance with the Constitution and By-laws of the State Association. One member of the Board of Censors shall be elected each year to serve for three years, provided that at the first election after the adoption of this Constitution one member of the board shall be elected for one, one for two and one for three years.

ARTICLE VI.—FUNDS AND EXPENSES.

Funds for meeting the expenses of the Society shall be raised by admission fee, annual dues, special assessments and voluntary contri-

bution. Funds may be appropriated by vote of the Society for such purposes as will promote its welfare and that of the profession.

ARTICLE VII.—CHARTER.

The Society shall apply to the State Society for a charter at the meeting at which this Constitution and By-laws are adopted, or as soon thereafter as practicable, and the charter shall be kept in the custody of the Secretary.

ARTICLE VIII.—INCORPORATION.

The Society shall have authority to appoint a Board of Trustees and to provide for articles of incorporation whenever it may deem the same necessary.

ARTICLE IX.—AMENDMENTS.

The Society may amend any article of this Constitution by a two-thirds vote of its members at any regular meeting, provided that such amendment shall have been read in open session at a previous regular meeting and shall have been sent by mail to each member ten days in advance of the meeting at which final action is to be taken.

By-laws.

CHAPTER I.—MEMBERSHIP.

SECTION 1. The Society shall judge of the qualification of its members, but as it is the only door to the State Medical Society and to the American Medical Association for physicians within its jurisdiction, every reputable and legally qualified physician in ..... County, who does not practice or claim to practice sectarian medicine, shall be entitled to membership.

SEC. 2. A candidate for membership shall make application in writing, and shall state his age, his college, and date of graduation, the place in which he has practiced, and the date of registration in this State. The application must be accompanied by the admission fee, and must be endorsed by two members of this Society. It shall be referred to the Board of Censors, who shall inquire into the standing of the applicant, assure themselves that he or she is duly registered according to the laws of the State, and report at the next regular meeting of this Society. Election shall be by ballot, and two-thirds of the votes of the members present and voting shall be necessary to elect. The application shall be returned to the Secretary, who shall file it for future reference. Applications for membership from rejected candidates shall not be received within six months of such rejection.

SEC. 3. A physician accompanying his application with a transfer card from another component county society of this or any State within

sixty days of the issuance of said card, may be admitted without fee on a majority vote of the members present, and without the application being referred to the Board of Censors. Such applications may be acted on at the meeting at which they are presented on the vote of three-fourths of the members present, otherwise they shall lie over until the next regular meeting. No annual dues for the current year shall be charged against such members, provided the same have been paid to the society from which the applicant comes.

SEC. 4. A physician residing in an immediately adjoining county may become a member of this Society in like manner and on the same terms as a physician living in this county, on permission of the county society of the county in which the applicant lives, if there be one, or of the State Councilor for this jurisdiction.

SEC. 5. A member in good standing who is free from all indebtedness to this Society, and against whom no charges are pending, wishing to withdraw, shall be granted a transfer card. This card shall state the date the member associated himself with this Society, the date of issuance of the card, and shall be signed by the President and Secretary. It shall be accompanied with a copy of the application presented at the time the member joined the Society, for information to the society to which the member desires to attach himself.

SEC. 6. All members shall be equally privileged to attend all meetings and take part in all proceedings, and shall be eligible to any office or honor within the gift of the Society, so long as they conform to this Constitution and By-laws, including the payment of the dues to this Society and to the State Association: *Provided*, that no member under sentence of expulsion shall take part in any of the proceedings, or be eligible to any office until relieved of such disability. And provided further, that none of the privileges of membership shall be extended to any person not a member of this Society, except on a majority vote of the Society in regular meeting.

SEC. 7. A member who is guilty of a criminal offense or of gross misconduct, either as a physician or as a citizen, or who violates any of the provisions of this Constitution and By-laws, shall be liable to censure, suspension or expulsion. Charges against a member must be made in writing and be delivered to the Secretary, who shall immediately furnish a copy to the accused and to the Chairman of the Board of Censors. The Board of Censors shall investigate the charges on their merits, but no action shall be taken by the board before giving the accused and accusers ample opportunity to be heard. Nor shall any action be taken by the board within ten days of the presentation of the charges to the accused. The board shall report (1) that the charges are not sustained; or (2) that the charges are sustained, and that the accused be (*a*) censured; (*b*) suspended for a definite time, or (*c*) expelled. Censure or suspension shall require a two-thirds vote of the members present and voting, and a three-fourths vote of those present and voting shall be required to expel a member. No action

shall be taken by the Society in such cases until at least six weeks have elapsed since the filing of the charges. A member suspended for a definite time shall be reinstated at the expiration of the time, without action on his part or on the part of the Society.

Sec. 8. Kindly efforts in the interest of peace, conciliation or reformation, so far as possible and expedient, shall precede the filing of formal charges affecting the character or standing of a member, and the accused shall have opportunity to be heard in his own defense in all trials and proceedings of this nature.

Sec. 9. Members expelled from this Society for any cause shall be eligible for membership after one year from date of expulsion, and on the same terms and in like manner as original applicants.

Chapter II.—Powers and Duties.

Section 1. This Society shall have general direction of the affairs of the medical profession of the county, and its influence shall be constantly exerted to better the scientific, material and social condition of every physician within its jurisdiction. Systematic efforts shall be made by each member, and by the Society as a whole, to increase the membership until it embraces every reputable physician in the county.

Sec. 2. A meeting shall be held at....p. m. on the.....in each month (or oftener).....members shall constitute a quorum. The officers and committee on program shall profit by experience and by the example of other similar societies, and strive to arrange for the most attractive and successful proceedings for each meeting. Younger members especially shall be encouraged to do post-graduate and original research work, and to give this Society the first results of such labors. Crisp papers and discussions and reports of cases shall be arranged for and encouraged, and tedious and profitless proceedings and discussions shall be avoided as far as practicable.

Sec. 3. One meeting during each year may be set apart for a discussion of the business affairs of the profession of the county, with the view of adopting the best methods for the guidance of all. In all proper ways the public shall be taught that business methods and prompt collections are essential to the equipment of the modern physician and surgeon, and that it suffers even more than the profession when this is not recognized.

Sec. 5. The Society shall endeavor to educate its members to the belief that the physician should be a leader in his community, in character, in learning, in dignified and manly bearing, and in courteous and open treatment of his brother physicians, to the end that the profession may occupy that place in its own and the public estimation to which it is entitled.

Chapter III.—Officers.

Section 1. The officers of the Society shall be elected at the (December) meeting in each year, which shall be known as the annual meet-

ing. Nominations shall be made by informal ballot, and all elections shall be by ballot. The vote of a majority of all the members present shall be necessary to an election.

SEC. 2. The President shall preside at all meetings of the Society, and perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession in the county during the year, and it shall be his pride and ambition to leave it in better condition as regards both scientific attainments and harmony than at the beginning of his term of office.

SEC. 3. The Vice-President shall assist the President in the performance of his duties, shall preside in his absence, and, on his death, resignation or removal from the county, shall succeed to the presidency.

SEC. 4. The Secretary shall record the minutes of the meetings and receive and care for all records and papers belonging to the Society, including its charter. He shall keep account of and promptly turn over to the Treasurer all funds of the Society which may come into his hands. He shall make and keep a correct list of the members of this Society in good standing, noting of each his correct name, address, place and date of graduation, and the date of the certificate entitling him to practice medicine; and in a separate list he shall note the same facts in regard to each legally qualified physician in this county not a member of this Society. It shall be his duty to send a copy of such lists, on blank forms furnished him for that purpose, to the Secretary of the State Association, at such time as may be designated by the State Association. In making such lists he shall endeavor to account for each physician who has moved into or out of the county during the year, stating, when possible, both his present and past address. At the same time, and with his report of such lists of members and physicians, he shall transmit to the State Association his order on the Treasurer for the annual dues of the Society.

SEC. 5. The Treasurer shall receive all dues and money belonging to the Society from the hands of the Secretary or members, and shall pay out the same only on the written order of the Secretary.

SEC. 6. The delegates shall attend and faithfully represent the members of this Society and the profession of this county in the House of Delegates of the State Society, and shall make a report of the proceedings of that body to this Society at the earliest opportunity.

CHAPTER IV.—COMMITTEES.

SECTION 1. There shall be a Board of Censors as provided in the constitution, a standing committee on programs and scientific work, a committee on public health and legislation, and such special committees as may from time to time be deemed necessary.

SEC. 2. *Board of Censors.*—This board, consisting of three members, one elected annually, shall examine and report on the qualification of applicants for membership, subjecting each applicant to such exami-

nation as it may deem necessary. It shall investigate charges preferred against a member, and report its conclusions and recommendations to the Society. In case of the absence of a member of the board, the President may appoint some member to fill the vacancy. The senior member of the board in point of service shall be chairman of the board.

Sec. 3. *Committee on Program and Scientific Work.*—This committee shall consist of the President, Vice-President and Secretary. It shall be its duty to promote the scientific and social functions of the Society by arranging attractive programs for each meeting, and by urging each member to take part in the scientific work. It shall stimulate fraternalism and good feeling among the members in every way possible.

Sec. 4. *Committee on Public Health and Legislation.*—This committee shall consist of three members, who shall be appointed annually by the President. It shall be its duty to enforce and support the sanitary and medical laws of the State in this county, to cooperate with the legislative committee of the State Association in all matters pertaining to legislation, and to prosecute quacks and medical pretenders in this county.

Chapter V.—Funds and Expenses.

Section 1. The admission fee, which must accompany the application, shall be $5.00, and shall include the annual dues for the fiscal year, provided that when more than one-half of the fiscal year has elapsed at the time of election of a member, one-half of the annual dues shall be remitted, making the admission fee in such cases $4.00. The admission fee shall be returned if the applicant is not accepted.

Sec. 2. The annual dues shall be $2.00, and shall be payable on January 1 of each year. Any member who shall fail to pay his annual dues by April 1 shall be held as suspended without action on the part of the Society. A member suspended for nonpayment of dues shall be restored to full membership on payment of all indebtedness. Members more than one year in arrears shall be dropped from the roll of members.

Sec. 3. The fiscal year of this Society shall be from January to December, inclusive.

Chapter VI.—Order of Business.

The order of business shall be as follows:

1. Call to order by the President.
2. Reading of minutes of last meeting.
3. Clinical cases.
4. Papers and discussions.
5. Unfinished business.
6. Miscellaneous business.
7. Announcements.
8. Adjournment.

Chapter VII.—Rules of Order.

The deliberations of this Society shall be governed by parliamentary usage as contained in Robert's Rules of Order, unless otherwise determined by vote.

Chapter VIII.—Principles of Ethics.

The Principles of Ethics of the American Medical Association and of the Medical Society of the State of North Carolina shall be the Code of this Society.

Chapter IX.—Amendments.

These by-laws may be amended at any regular meeting by a two-thirds vote therefor, provided that such amendment has been read in open session at the preceding regular meeting, and a copy of the same has been sent to each member by the Secretary ten days in advance of the meeting at which final action is to be taken.

Alphabetical List of Members of the Medical Society of the State of North Carolina, with County in Which Local Membership and Residence is Indicated.

Name.	*County.*
Anderson, C. A.	Alamance
Ashe, E. S.	Anson
Ambler, Chase P.	Buncombe
Archer, I. J.	Buncombe
Anderson, J. G.	Buncombe
Ashworth, W. G.	Buncombe
Anderson, Paul V.	Burke
Archey, L. M.	Cabarrus
Abernethy, H. L.	Catawba
Abernethy, W. L.	Catawba
Abernethy, J. F.	Cherokee
Aydlette, J. P.	Cleveland
Averitt, K. G.	Cumberland
Anderson, Abel	Davidson
Adams, C. A.	Durham
Adams, C. E.	Gaston
Anders, McT. G.	Gaston
Armfield, D. A.	Guilford
Arnold, L. J.	Harnett
Abel, J. F.	Haywood
Allen, R. L.	Haywood
Allen, T. A.	Henderson-Polk
Adams, M. R.	Iredell-Alexander
Anderson, Thos. E.,	Iredell-Alexander
Abernethy, H. N.	Lincoln
Ashworth, B. L.	McDowell
Alexander, J. R.	Mecklenburg
Alexander, Annie L.	Mecklenburg
Alexander, H. Q.	Mecklenburg
Austin, J. A.	Mecklenburg
Austin, Fred.	Mecklenburg
Allen, Wm.	Mecklenburg
Achorn, J. Warren	Moore
Asbury, F. E.	Montgomery
Akerman, Joseph	New Hanover
Abernethy, E. A.	Orange
Attmore, Geo. S.	Pamlico
Aydlette, H. T.,	Pasquotank-Camden-Dare
Alexander, L. L.	Pender
Atkins, G. J.	Rowan
Andrews, R. M.	Rutherford
Allen, Joseph A.	Stanly
Anderson, J. N.	Stanly
Allred, E. W.	Surry
Ashby, Thos. B.	Surry
Armfield, R.	Union

Name.	*County.*
Ashcraft, J. E.	Union
Alston, B. P.	Vance
Abernethy, C. O.	Wake
Anderson, Albert	Wake
Alston, Willis	Warren
Alston, Willis Jr.	Warren
Anderson, W. H.	Wilson
Anderson, W. S.	Wilson
Barrett, W. W.	Anson
Beckwith, R. B.	Anson
Bennett, J. H.	Anson
Ballou, J. L.	Ashe
Barton, J. H.	Ashe
Blevins, Manly	Ashe
Blount, W. A.	Beaufort
Blount, J. G.	Beaufort
Bonner, H. M.	Beaufort
Brown, Ed. M.	Beaufort
Bullock, W. J.	Beaufort
Battle, S. W.	Buncombe
Boyd, L.	Buncombe
Briggs, H. H.	Buncombe
Brookshire, H. G.	Buncombe
Brown, Thos. E. W.	Buncombe
Brownson, W. C.	Buncombe
Burroughs, Jas. A.	Buncombe
Beall, L. G.	Burke
Barrier, P. A.	Cabarrus
Black, J. C.	Cabarrus
Burleyson, L. N.	Cabarrus
Blackburn, T. C.	Catawba
Bonner, K. P. B.	Carteret
Badgett, J. F.	Caswell
Burns, Wm.	Chatham
Blake, J. F.	Columbus
Bullock, T. C.	Cumberland
Brown, G. W.	Cumberland
Baum, Julian	Currituck
Buchanan, E. J.	Davidson
Byerly, A. B.	Davie
Boddie, N. P.	Durham
Bowling, E. H.	Durham
Brooks, B. N.	Durham
Baker, J. M.	Edgecombe
Brothers, E. J.	Edgecombe
Buss, S. P.	Edgecombe
Bahnson, H. T.	Forsyth

Name.	*County.*
Bynum, John	Forsyth
Bynum, Wahe H.	Forsyth
Burt, S. P.	Franklin
Bobbett, E. H.	Franklin
Boyette, E. C.	Gaston
Bunting, R. C.	Gaston
Brooks, G. C.	Gates
Brock, G. F.	Graham
Booth, S. D.	Granville
Bannor, C. W.	Guilford
Battle, J. T. J.	Guilford
Beall, W. P.	Guilford
Bowman, H. P.	Guilford
Boyles, J. H.	Guilford
Brooks, J. E.	Guilford
Brooks, Z. T.	Guilford
Burrus, John T.	Guilford
Burbage, T. J.	Hertford
Boyles, A. C.	Harnett
Brown, J. S.	Henderson-Polk
Bell, A. E.	Iredell-Alexander
Burgin, H. F.	Jackson
Booker, B. N.	Johnston
Baird, J. H.	Madison
Burnett, I. E.	Madison
Butt, V. R.	Mitchell
Bryant, P. G.	Mitchell
Blair, A. M.	Moore
Bowman, H. E.	Montgomery
Battle, Jas. P.	Nash
Brantley, C. H.	Nash
Brantley, Hassell	Nash
Bell, Chas. D.	New Hanover
Bellamy, W. J. H.	New Hanover
Bellamy, R. H.	New Hanover
Bullock, D. W.	New Hanover
Bowman, J. H.	New Hanover
Bradford, R. H.	Pender
Baynes, R. S.	Person
Bradsher, W. A.	Person
Brown, Zeno	Pitt
Basnight, T. G.	Pitt
Brown, J. P.	Robeson
Bowers, A. H.	Rowan
Brawley, R. V.	Rowan
Brown, Geo. A.	Rowan
Busby, J. G.	Rowan
Bostic, W. C.	Rutherford
Biggs, H. M.	Rutherford
Blue, K. A.	Scotland
Bennett, A. M.	Swain
Blair, J. M.	Union
Blair, M. P.	Union
Bass, H. H.	Vance
Battle, K. P. Jr.	Wake
Bell, G. M.	Wake
Blalock, N. M.	Wake
Boone, W. H.	Wake
Buffalo, J. S.	Wake
Burt, B. W.	Wake
Barefoot, J. J.	Wake
Barnes, B. F.	Wilson
Best, Henry	Wilson
Blackwell, T. L.	Yadkin
Carpenter, S. B.	Anson
Covington, J. M.	Anson
Covington, J. M. Jr.	Anson
Call, T. J.	Asne
Colvard, J. W.	Ashe
Capehart, A.	Bertie
Credle, E. S.	Beaufort
Clark, Geo. L.	Bladen
Curtis, W. G.	Brunswick
Calloway, A. W.	Buncombe
Carraway, J. F.	Buncombe
Cheeseborough, Thos. P.	Buncombe
Clemenger, F. J.	Buncombe
Cotton, Clyde E.	Buncombe
Carroll, R. S.	Buncombe
Cocke, Jere	Buncombe
Caldwell, D. G.	Cabarrus
Carter, G. H.	Caldwell
Corpening, Oscar J.	Caldwell
Clarke, F. M.	Carteret
Campbell, Jas. R.	Catawba
Chapin, H. T.	Chatham
Casteel, L. R.	Cherokee
Champion, C. O.	Cleveland
Crowell, W. H.	Columbus
Caton, Geo. A.	Craven
Cathell, J. E.	Davidson
Clodfelter, Chas. M.	Davidson
Carroll, J. W.	Duplin
Carr, R. L.	Duplin
Cheatham, Arch.	Durham
Copple, T. M.	Forsyth
Carlton, R. L.	Forsyth
Corbell, E. F.	Gates
Coggeshall, G. A.	Granville
Coble, W. A.	Guilford
Collins, Jno. A.	Halifax
Campbell, Archibald,	Iredell-Alexander
Cloninger, L. V.	Iredell-Alexander
Campbell, R. A.	Iredell-Alexander
Carpenter, F. A.	Iredell-Alexander
Candler, Chas. Z.	Jackson
Candler, J. M.	Jackson
Coleman, T. S.	Johnston

Name.	*County.*
Crowell, L. A.	Lincoln
Costner, G. H.	Lincoln
Cheek, B. A.	McDowell
Chaney, T. M.	McDowell
Crowell, A. J.	Mecklenburg
Costner, T. F.	Mecklenburg
Currie, E. W.	Mecklenburg
Clifford, J. S.	Mecklenburg
Caveness, A. H.	Moore
Covington, L. C.	Nash
Cranmer, J. B.	New Hanover
Caldwell, W. M.	New Hanover
Cook, I. H.	Northampton
Cox, E. L.	Onslow
Crowell, W. H.	Pender
Cox, B. T.	Pitt
Croom, A. B.	Robeson
Croom, J. D.	Robeson
Currie, D. S.	Robeson
Caldwell, J. A.	Rowan
Chenault, W. F.	Rowan
Cowan, Robt. L.	Rowan
Crump, W. L.	Rowan
Chapman, G. M.	Rutherford
Carpenter, F. A.	
Cooper, G. M.	Sampson
Crumpler, Paul	Sampson
Campbell, J. I.	Stanly
Cox, B. F.	Stanly
Cooper, J. A.	Swain
Cheatham, Goode	Transylvania
Carstarphen, W. T.	Vance
Caveness, Z. M.	Wake
Cooke, F. K.	Wake
Cotton, A. T.	Wake
Cohen, B. W.	Washington
Cobb, W. H. H.	Wayne
Cobb, W. H. H., Jr.	Wayne
Crocker, S. H.	Wilson
Clingman, J. J.	Yadkin
Dunlap, J. M.	Anson
Dixon, W. H.	Beaufort
Desher, J. Arthur	Brunswick
David, J. E.	Buncombe
Dunn, Wm. L.	Buncombe
Davis, Geo.	Carteret
Duncan, C. L.	Carteret
Duffy, Chas.	Craven
Duffy, Frank	Craven
Duffy, Leinster	Craven
Dye, Jno. C.	Cumberland
Dalton, D. N.	Forsyth
Dalton, W. N.	Forsyth
Davis, A. P.	Forsyth
Davis, J. W.	Forsyth
Davis, W. W.	Gaston
Dodson, H. H.	Guilford
Davis, W. C.	Guilford
Denning, O. L.	Harnett
Davis, F. M.	Haywood
Drafts, A. B.	Henderson-Polk
Dixon, Guy E.	Henderson-Polk
Davidson, J. E.	Mecklenburg
DeArmond, J. Mc.	Mecklenburg
Daligny, Chas.	Montgomery
Dew, S. P.	Nash
Daniels, O. C.	Pamlico
Dees, D. A.	Pamlico
Davis, J. J.,	Pasquotank-Camden-Dare
Dawson, W. W.	Pitt
Dixon, Joseph	Pitt
Dickson, A. P.	Robeson
Dorsett, E. Rose	Rowan
Davis, Robt. L.	Swain
Dees, W. A.	Union
Dixon-Carroll, E. Delia	Wake
Dickenson, E. T.	Wilson
Disosway, A. W.	Washington
Duncan, J. E.	Wilkes
Duffy, R. N.	Craven
Dees, R. O.	Guilford
Dick, J. V.	Guilford
Duncan, G. F.	Guilford
Denny, W. W.	Lenoir
Evans, L. B.	Bladen
Elias, Lewis W.	Buncombe
Eckel, O. F.	Buncombe
Everhart, W. H.	Catawba
Edwards, J. D.	Chatham
Ellis, Robt. C.	Cleveland
Eddleman, H. M.	Gaston
Edwards, G. C.	Greene
Edgerton, J. L.	Henderson-Polk
English, I. L.	Madison
Ewing, J. B.	Mitchell
Ellis, A. J.	Northampton
Everett, A. C.	Richmond
Evans, Wm. E.	Robeson
Everington, Geo. D.	Scotland
English, Ed. S.	Transylvania
Ewbanks, J. B.	Union
Exum, W. P. Jr.	Wayne
Eller, J. A.	Wilkes
Eller, A. J.	Wilkes
Edwards, C. P.	Yancey
Faucett, T. S.	Alamance
Freeman, R. A.	Alamance
Fletcher, M. H.	Buncombe

Name.	*County.*
Flew, J. W.	Cabarrus
Foil, M. A.	Cabarrus
Flowers, G. E.	Caldwell
Flowers, C. E.	Caldwell
Floyd, A. G.	Columbus
Ferrell, J. A.	Duplin
Faison, Jno. M.	Duplin
Felts, R. L.	Durham
Fearington, J. P.	Forsyth
Flynt, S. S.	Forsyth
Fulp, E.,	Forsyth
Floyd, R. P.	Franklin
Fortune, A. F.	Guilford
Fox, M. F.	Guilford
Farrar, M. R.	Guilford
Foscue, J. E.	Guilford
Ferguson, H. B.	Halifax
Few, Columbus	Henderson-Polk
Freeman, W. G.	Hertford
Frisbee, J. T.	Madison
Frisbee, J. T.	Madison
Fleming, M. I.	Martin
Faison, I. W.	Mecklenburg
Ferguson, K. M.	Moore
Flowers, C. A.	Pamlico
Fearing, I.,	Pasquotank-Camden-Dare
Fearing, Zenos,	Pasquotank-Camden-Dare
Ferrebee, C. G.,	Pasquotank-Camden-Dare
Fearing, W. B.,	Pasquotank-Camden-Dare
Frizzelle, M. T.	Pitt
Fox, Thos. I.	Randolph
Faust, D. L.	Randolph
Fowlkes, J. I.	Richmond
Fitzgerald, J. F.	Rowan
Flippen, J. Meigs	Rowan
Foust, I. H.	Rowan
Fulp, Elias	Stokes
Flippen, R. E. L.	Surry
Flippen, S. T.	Surry
Fenner, E. F.	Vance
Ferrebee, E. B.	Wake
Fowler, M. L.	Wake
Farthing, L. E.	Watauga
Faison, W. W.	Wayne
Fassett, B. W.	Yadkin
Golev, W. R.	Alamance
Goodman, E. G.	Brunswick
Glenn, E. B.	Buncombe
Gouger, G. J.	Cabarrus
Grier, S. A.	Cabarrus
George, D. S.	Carteret
Graham, Wm. A.	Cherokee
Gregg, W. T.	Cleveland
Gibbs, N. M.	Craven
Graham, Geo. A.	Cumberland
Garrington, J. F.	Currituck
Griggs, W. T.	Currituck
Gibbs, J. B.	Davidson
Graham, B. R.	Duplin
Graham, Joseph	Durham
Graham, Wm. A.	Durham
Gray, E. P.	Forsyth
Griffith, J. F.	Forsyth
Garren, R. H.	Gaston
Garrison, D. A.	Gaston
Glenn, H. F.	Gaston
Glenn, L. N.	Gaston
Gilmer, C. S.	Guilford
Gordon, J. R.	Guilford
Gove, Anna M.	Guilford
Gray, Claiborn	Guilford
Grimsley, J. E.	Guilford
Glasscock, Joy Harris	Guilford
Grayson, C. S.	Guilford
Green, I. E.	Halifax
Graham, W. A.	Haywood
Greenwood, B. H.	Haywood
Grady, Earl	Henderson-Polk
Greenwood, S. E.	Henderson-Polk
Guerard, Arthur R.,	Henderson-Polk
Green, A. W.	Hertford
Gray, R. H.	Hertford
Grady, J. C.	Johnston
Griffin, J. A.	Johnston
Garren, R. H.	McDowell
Gilbert, W. W.	McDowell
Graham, W. A.	Mecklenburg
Grantham, N. L.	Montgomery
Gilmor, N. D.	Montgomery
Gilbert, W. W.	McDowell
Green, T. M.	New Hanover
Gibbon, John H.	Mecklenburg
Gibbon, Robt. L.	Mecklenburg
Gladmon, Edwin	Moore
Gilmore, W. D.	Moore
Griggs, J. B.,	Pasquotank-Camden-Dare
Grimes, R. J.	Pitt
Garrett, F. J.	Richmond
Gaither, J. B.	Rowan
Goodman, A. B.	Rowan
Gibson, J. S.	Scotland
Gibson, M. R.	Robeson
Gill, R. J.	Vance

Name.	*County.*
Gaines, L. M.	Wake
Goodwin, A. W.	Wake
Gunn, T. L.	Wayne
Gilreath, F. H.	Wilkes
Hart, J. E.	Anson
Hardy, Ira M.	Beaufort
Hunter, H. H.	Beaufort
Harrell, W. J.	Bertie
Horton, E. H.	Bertie
Harris, I. A.	Buncombe
Holmes, L. E.	Buncombe
Hemell, M. H.	Buncombe
Hall, Jas. K.	Burke
Hennessee, E. A.	Burke
Headen, W. E.	Carteret
Highway, S. C.	Cherokee
Hammond, A. F.	Craven
Hughes, F. W.	Craven
Highsmith, Seavy	Cumberland
Highsmith, J. F.	Cumberland
Hill, D. J.	Davidson
Hill, Joel	Davidson
Hill, W. Lee	Davidson
Hussey, L.	Duplin
Hatcher, T. R.	Duplin
Hicks, C. S.	Durham
Hicks, W. N.	Durham
Holloway, R. L.	Durham
Harrell, S. N.	Edgecombe
Haines, J. L.	Forsyth
Hammock, J. C.	Forsyth
Harris, J. H.	Franklin
Henderson, R. B.	Franklin
Hay, W. S.	Gaston
Hunter, B. R.	Gaston
Hunter, M. C.	Gaston
Howell, S. F.	Graham
Hooper, L. D.	Graham
Hays, Ben. K.	Granville
Hardee, P. R.	Granville
Harper, James H.	Greene
Harrison, Edmund	Guilford
Hilton, J. J.	Guilford
Holt, W. T.	Guilford
Harrison, A. S.	Halifax
Halford, J. W.	Harnett
Hicks, I. F.	Harnett
Highsmith, Chas.	Harnett
Holt, W. P.	Harnett
Hudson, W. L.	Harnett
Hyatt, Fred. C.	Haywood
Howe, W. B. W.,	Henderson-Polk
Hood, J. S.	Henderson-Polk
Harris, J. E.	Hyde
Hall, E. A.	Iredell-Alexander
Houck, Albert	Iredell-Alexander
Hill, W. J.	Iredell-Alexander
Hooper, Delos D.	Jackson
Hooks, Thel.	Johnston
Hocutt, B. A.	Johnston
Hargrove, W. F.	Lenoir
Hodges, J. M.	Lenoir
Hoover, Chas. H.	Lincoln
Hargrove, W. H.	Martin
Hawley, F. O.	Mecklenburg
Henderson, S. M.	Mecklenburg
Hunter, L. W.	Mecklenburg
Hovis, Leighton	Mecklenburg
Hoyle, Hughes B.	Moore
Harris, A. H.	New Hanover
Harper, Chas. T.	New Hanover
Honnett, J. H.	New Hanover
Hall, Wright	New Hanover
Hester, J. R.	Orange
Hughes, C. M.	Orange
Hudson, J. H.	Pitt
Henly, Sam A.	Randolph
Hubbard, C. C.	Randolph
Hunter, J. V.	Randolph
Hunter, N. C.	Richmond
Hodgin, H. H.	Robeson
Heilig, H. G.	Rowan
Holshaiser	Rowan
Harris, E. B.	Rutherford
Harrell, L. B.	Rutherford
Hamrick, T. G.	Rutherford
Hicks, O.	Rutherford
Hicks, Romeo	Rutherford
Haynes, B. M.	Rutherford
Holmes, F. H.	Sampson
Hiatt, H. B.	Sampson
Hamer, A. W.	Scotland
Hartsell, F. E.	Stanly
Hathcock, T. A.	Stanly
Hill, W. I.	Stanly
Hall, J. Clegg	Stanly
Hill, L. H.	Stokes
Hollingsworth, Ed. M.	Surry
Hollingsworth, J. M.	Surry
Hollingsworth, R. E.	Surry
Holt, Russell D.	Swain
Hunt, C. W.	Transylvania
Houston, H. C.	Union
Harris, F. R.	Vance
Harris, H. H.	Wake
Hayden, Catherine P.	Wake
Haywood, F. J.	Wake
Haywood, Hubert	Wake
Holding, S. P.	Wake
Horton, W. C.	Wake
Holt, T. J.	Warren

Name.	*County.*
Hassell, J. L.	Washington
Halsey, B. F.	Washington
Hardison, W. H.	Washington
Hodges, J. M.	Watauga
Horton, W. P.	Wilkes
Herring, B. S.	Wilson
Harrison, J. S.	Wilson
Holcomb, C. M.	Yadkin
Hutchins, E. M.	Yadkin
Harding, T. R.	Yadkin
Ivey, W. P.	Caldwell
Irwin, Jno. R.	Mecklenburg
Ingram, C. B.	Montgomery
Jones, A. L.	Ashe
Jones, T. J.	Ashe
Jones, R. W.	Ashe
Jenkins, P. C.	Bertie
Jackson, — —.	Beaufort
Jordan, Chas. S.	Buncombe
Johnson, A. E.	Buncombe
Jones, A. D.	Caldwell
Johnson, J. T.	Catawba
Johnson, Thos. C.	Columbus
Jordan, D. B.	Columbus
Jones, R. DuVal	Craven
Jordan, Wm. S.	Cumberland
Julian, Chas. A.	Davidson
Johnson, N. M.	Durham
Jordan, A. C.	Durham
Jewett, R. D.	Forsyth
Jenkins, J. T.	Forsyth
Jenkins, J. H.	Gaston
Jones, J. W.	Guilford
Jordan, G. E.	Guilford
Jones, W. M. Jr.	Guilford
Jones, E. H.	Hyde
Jurney, P. C.	Iredell-Alexander
Jones, Harry M.	Macon-Clay
Justice, M. L.	McDowell
Justice, G. B.	McDowell
Joyner, R. W.	Northampton
Joyner, T. D.	Northampton
James, F. C.	Pitt
Jones, C. M.	Pitt
Joyner, C. C.	Pitt
John, Peter	Scotland
Jones, Wm. D.	Scotland
Jones, A. G.	Stokes
Jerome, J. R.	Union
Jenkins, C. L.	Wake
Johnson, R. W.	Wake
Jordan, T. M.	Wake
Judd, J. M.	Wake
Kerr, J. Edwin	Anson

Name.	*County.*
Kellum, Wm. D.	Beaufort
King, R. M.	Cabarrus
Kent, A. A.	Caldwell
Kirkman, T. A.	Chatham
Kimbraugh, M. D.	Davie
Kapp, H. H.	Forsyth
Kernodle, G. W.	Guilford
Knight, W. P.	Guilford
Kirkpatrick, Wm. L.	Haywood
Kirk, Wm. R.	Henderson-Polk
King, J. E.	Iredell-Alexander
Klutz, E. E.	Iredell-Alexander
Knight, J. B.	Martin
Kirby, Guy S.	McDowell
King, Parks M.	Mecklenburg
Knox, John	Mecklenburg
Keerans, L. C.	Mecklenburg
Kinsman, H. F.	Richmond
Kirkpatrick, L. R.	Robeson
Kitchen, T. D.	Robeson
Kent, John J.	Robeson
Kerr, C. S.	Sampson
King, O. D.	Stanly
King, O. D.	Stanly
King, M. M.	Transylvania
Knox, A. W.	Wake
Kennedy, J. B.	Wayne
Kornegay, L. W.	Wayne
Long, Geo. W.	Alamance
Lemly, S. T.	Ashe
Lucas, W. H. G.	Bladen
Laird, E. C.	Buncombe
Lee, P. H.	Buncombe
Lafferty, J. S.	Cabarrus
Love, B. E.	Caswell
Long, Fred. Y.	Catawba
Lattimore, E. B.	Cleveland
Lee, L. V.	Cleveland
Lilly, J. M.	Cumberland
Lane, Jno. L.	Duplin
Landing, J. F.	Duplin
Linville, A. Y.	Forsyth
Lockett, E. A.	Forsyth
Lott, H. S.	Forsyth
Lee, W. C. P.	Gates
Ledbetter, A. E.	Guilford
Little, Thos. R.	Guilford
Long, Jno. W.	Guilford
Logan, Jno. E.	Guilford
Leggett, K.	Halifax
Lee, S. P. J.	Harnett
Long, H. F.	Iredell-Alexander
Leophson, Mary E.	Macon-Clay
Lyle, S. H.	Macon-Clay
Long, B. L.	Martin

Name.	*County.*
Lafferty, R. S.	Mecklenburg
Long, V. M.	Mecklenburg
Laster, P. D.	Moore
Love, L. H.	New Hanover
Lewis, H. W.	Northampton
Lumsden, W. J.,	Pasquotank-Camden-Dare
Lister, J. L.,	Pasquotank-Camden-Dare
Long, W. T.	Person
Love, B. E.	Person
Laughinghouse, Chas. O'H.	Pitt
Ledbetter, J. M.	Richmond
Lovelace, T. B.	Rutherford
Lee, A. M.	Sampson
Leak, J. J.	Stokes
Lawrence, C. L.	Surry
Lyda, A. E.	Transylvania
Lyda, W. M.	Transylvania
Lewis, R. H.	Wake
Lee, R. E.	Wayne
Lamm, I. W.	Wilson
Leak, W. G.	Yadkin
Montgomery, H. M.	Alamance
Moore, H. R.	Alamance
Meisenheimer, T. F.	Anson
Mariner, N. B.	Beaufort
Mitchell, Wayland	Bertie
Moore, Tilon V.	Brunswick
Merriwether, F. T.	Buncombe
Merrimon, Louise A.	Buncombe
Minor, C. L.	Buncombe
Morris, E. R.	Buncombe
Manville, W. E.	Buncombe
Morse, L. B.	Buncombe
Mathews, J. M.	Cabarrus
Mattocks, C. J.	Caldwell
Moore, J. C.	Caldwell
Malloy, S. A.	Caswell
Menzies, H. C.	Catawba
Mitchell, W. F.	Cleveland
Morrison, Rufus R.	Cleveland
Maxwell, F. B.	Columbus
Marsh, J. H.	Cumberland
Mann, S. M.	Currituck
Mack, J. H.	Davidson
Myers, J. A.	Davidson
Mock, F. L.	Davidson
Martin, J. F.	Davie
Martin, W. C.	Davie
Mann, T. A.	Durham
Manning, J. M.	Durham
Moore, R. A.	Durham

Name.	*County.*
Mercer, W. P.	Edgecombe
Malone, J. E.	Franklin
Mann, J. J.	Franklin
Matheson, J. P.	Gaston
Maxwell, M. F.	Graham
Meadows, E. B.	Granville
Morris, J. A.	Granville
Murphy, W. B.	Greene
Meadows, W. J.	Guilford
Michaux, E. R.	Guilford
Miles, May S.	Guilford
Moseley, C. W.	Guilford
Morrison, J. W.	Guilford
Melvin, W. C.	Harnett
Moore, F. T.	Harnett
Mease, J. H.	Haywood
Mitchell, J. H.	Hertford
Mitchell, Paul	Hertford
Mann, J. A.	Hyde
Mann, J. E.	Hyde
Moore, J. T.	Iredell-Alexander
Moore, N. G.	Iredell-Alexander
Munns, L. A.	Johnston
Monk, H. S.	Lenoir
Monk, H. G.	Lenoir
Morphew, M. F.	McDowell
Martin, Mary L.	Mecklenburg
Mason, R. E.	Mecklenburg
Meisenheimer, C. A.	Mecklenburg
Montgomery, J. C.	Mecklenburg
Moore, B. S.	Mecklenburg
Munroe, J. P.	Mecklenburg
Monroe, J. P.	Moore
Monroe, W. A.	Moore
Matthews, J. H.	Moore-Lee
Matthews, M. L.	Moore-Lee
Mudgett, W. C.	Moore-Lee
Miller, R. B.	Nash
Mariott, M. B.	Nash
Matthews, T. A.	Nash
Murphy, J. G.	New Hanover
Moorehead, R. P.	Northampton
Muhlon, Bolton	Northampton
Manning, I. H.	Orange
Mangum, C. S.	Orange
Murphy, W. E.	Orange
Merritt, J. H.	Person
Morrill, D. S.	Pitt
Morrill, Jenness	Pitt
Moye, E. A. Jr.	Pitt
Moore, W. J.	Randolph
Mills, J. C.	Rockingham
Monk, H. L.	Rowan
Matthews, J. O.	Sampson

Name.	*County.*
Moir, S. A.	Stokes
Moore, W. B.	Stokes
Mebane, W. C.	Surry
Mashburn, B. D.	Wake
Moncure, Wm.	Wake
Mashburn, H. H.	Wake
Macon, P. J.	Warren
Myers, J. Q.	Wilkes
Moore, C. E.	Wilson
Moore, E. G.	Wilson
McPherson, J. W.	Alamance
McPherson, S. D.	Alamance
McBrayer, L. B.	Buncombe
McCracken, C. M.	Buncombe
McLean, J. N.	Buncombe
McCampbell, Jno. M.	Burke
McNairy, C. B.	Caldwell
McBride, M. H.	Caswell
McBrayer, T. E.	Cleveland
McKay, J. L.	Cleveland
McGougan, J. V.	Cumberland
McKethan, Jno. A.	Cumberland
McLean, Chas. E.	Gaston
McAnally, W. J.	Guilford
McKay, J. F.	Harnett
McLean, J. W.	Harnett
McCracken, J. R.	Haywood
McLaughlin, J. E.,	Iredell-Alexander
McLemore, G. A.	Johnston
McDavitt, A. J.	Madison
McLaughlin, C. S.	Mecklenburg
McDonald, A. A.	Moore
McIver, Lynn	Moore
McLeod, A. H.	Moore
McLeod, Gilbert	Moore
McIntosh, D. M.	McDowell
McDonald, A. D.	New Hanover
McMillan, W. D.	New Hanover
MacNider, Wm. DeB.	Orange
McMullan, Oscar,	Pasquotank-Camden-Dare
McMullen, T. S.	Perquimans
McFayden, Paul R.	Randolph
McPhail, L. D.	Richmond
McKinnon, W. H.	Robeson
McMillan, Ben. F.	Robeson
McMillan, J. L.	Robeson
McNatt, H. W.	Robeson
McPhail, W. A.	Robeson
McMurray, H. E.	Robeson
McKenzie, J. C.	Robeson
McGehee, J. W.	Rockingham
McKenzie, W. W.	Rowan
McLean	Sampson
McLean, Neil M.	Scotland
McClain, W. R.	Union
McAlister, Wm.	Vance
McCullers, J. J. L.	Wake
McGeachy, R. S.	Wake
McGee, J. W.	Wake
McKee, Jas.	Wake
McGee, J. W. Jr.	Wake
Nicholson, S. L.	Beaufort
Nicholson, J. T.	Beaufort
Nicholson, P. A.	Beaufort
Nicholson, S. T.	Beaufort
Nowell, L. A.	Bertie
Norman, Geo. W.	Caswell
Nesbitt, Chas. T.	Craven
Newbern, J. M.	Currituck
Newell, H. A.	Franklin
Nicholson, W. G.	Iredell-Alexander
Nicholson, W. G.	Iredell-Alexander
Nichols, A. A.	Jackson
Noble, R. J.	Johnston
Nick, G. D.	Johnston
Nelson, R. J.	Martin
Nisbet, W. O.	Mecklenburg
Nicholson, J. L.	Onslow
Nichols, C. G.	Person
Nobles, J. E.	Pitt
Norment, R. M.	Robeson
Norment, T. A.	Robeson
Northrup, T. L.	Robeson
Norris, Henry	Rutherford
McLean, Peter	Scotland
Neal, J. W.	Stokes
Nance, Geo. B.	Union
Neal, Jno. W.	Union
Orr, C. C.	Buncombe
Orr, Peter B.	Buncombe
Orr, R. J.	Cherokee
Oates, Geo.	Cleveland
Olive, P. W.	Cumberland
O'Kelly, J. M.	Durham
Olive, W. W.	Durham
Page, Jno. W.	Alamance
Pickett, J. A.	Alamance
Parris, O. J.	Alamance
Pennington, S. E.	Ashe
Pritchard, Jno. L.	Bertie
Paquin, Paul	Buncombe
Purefoy, Geo. W.	Buncombe
Pritchard, A. T.	Buncombe
Phifer, Ed. W.	Burke
Pemberton, W. D.	Cabarrus

Name.	*County.*
Pharr, T. F.	Cabarrus
Paul, W. T.	Carteret
Price, K. A.	Catawba
Palmer, R. W.	Chatham
Patton, W. O.	Cherokee
Palmer, B. H.	Cleveland
Pollock, Raymond	Craven
Primrose, R. S.	Craven
Patterson, J. F.	Craven
Peacock, J. W.	Davidson
Phillips, J. J.	Edgecombe
Pfohl, S. F.	Forsyth
Pepper, J. K.	Forsyth
Patrick, G. R.	Gaston
Paddison, J. R.	Guilford
Pierce, S. B.	Halifax
Pollard, W. B.	Hertford
Parker, G. E.	Johnston
Person, J. B.	Johnston
Parrott, James M.	Lenoir
Parrott, W. T.	Lenoir
Parrott, A. DeK.	Lenoir
Pridgeon, C. L.	Lenoir
Petrie, R. W.	Lincoln
Peck, E. J.	Madison
Peeler, C. N.	Mecklenburg
Pharr, W. W.	Mecklenburg
Pressly, Geo. W.	Mecklenburg
Peeler, C. N.	Mecklenburg
Peterson, C. A.	Mitchell
Palmer, R. W.	Moore
Phillips, J. B. Jr.	Nash
Parris, D. C.	Orange
Patrick, J. E.	Pitt
Pate, G. M.	Robeson
Pope, H. T.	Robeson
Poole, C. M.	Rowan
Peeler, J. H.	Rowan
Pate, W. T.	Scotland
Prince, D. M.	Scotland
Philips, M. D.	Stokes
Price, W. H.	Union
Perkins, D. R.	Union
Pendleton, A. S.	Vance
Penny, J. A. J.	Wake
Powers, J. B.	Wake
Perkins, F. E.	Warren
Powell, W. E.	Wayne
Parker, J. R.	Wayne
Pegram, R. W. S.	Wilkes
Quickel, T. C.	Gaston
Rodman, Jno. C.	Beaufort
Ruffin, J. B.	Bertie

Name.	*County.*
Robinson, Newton	Bladen
Reagan, J. A.	Buncombe
Reagan, W. L.	Buncombe
Reed, C. E.	Buncombe
Reynolds, Carl V.	Buncombe
Reynolds, T. F.	Buncombe
Reynolds, J. H.	Buncombe
von Ruck, Karl	Buncombe
von Ruck, Silvio	Buncombe
Ringer, P. H.	Buncombe
Riddle, Jos. B.	Burke
Rogers, Francis O.	Cabarrus
Royster, S. S.	Cleveland
Rhein, J. F.	Craven
Rose, A. S.	Cumberland
Ritter, F. W.	Currituck
Rodwell, J. W.	Davie
Ross, Geo. H.	Durham
Reid, R. M.	Gaston
Robinson, Frank	Gaston
Reitzel, C. E.	Guilford
Reitzel, J. R.	Guilford
Richardson, W. J.	Guilford
Roberson, Chas.	Guilford
Reives, J. T.	Guilford
Reurs, W. P.	Guilford
Register, F. M.	Halifax
Rowlands, H. W.	Harnett
Russell, Lloyd P.,	Henderson-Polk
Robinson, G. J.	Johnston
Rose, A. H.	Johnston
Rogers, W. A.	Macon-Clay
Roberts, Frank	Madison
Robinson, W. F.	Madison
Rhodes, J. S.	Martin
Register, E. C.	Mecklenburg
Russell, E. Reid	Mecklenburg
Reed, W. K.	Mecklenburg
Russell, F. H.	New Hanover
Reed, D. H.	Northampton
Riddick, W. M.	Perquimans
Ricks, L. E.	Pitt
Reedy, Howard	Robeson
Rosier, R. G.	Robeson
Rosier, S. B.	Robeson
Ray, J. B.	Rockingham
Ramseur, G. A.	Rowan
Reid, Geo. P.	Rutherford
Ring, J. W.	Surry
Reece, J. M.	Surry
Ray, O. L.	Wake
Rankin, W. S.	Wake
Rogers, Jas. R.	Wake
Royster, H. A.	Wake
Royster, W. I.	Wake

Name.	*County.*
Roberts, J. D.	Wayne
Robinson, M. E.	Wayne
Royall, M. A.	Yadkin
Russell, S. L.	Yadkin
Ray, J. L.	Yancey
Robertson, W. B.	Yancey
Stafford, W. G.	Alamance
Smith, L. C.	Anson
Staley, S. W.	Beaufort
Sawyer, James	Buncombe
Sevier, Jos. T.	Buncombe
Smith, Owen	Buncombe
Stevens, M. L.	Buncombe
Smoot, J. E.	Cabarrus
Shuford, J. H.	Catawba
Stevenson, T. F.	Catawba
Smith, W. F.	Columbus
Stovy, J. G.	Caldwell
Street, N. H.	Craven
Shaw, Henry M.	Currituck
Smith, J. A.	Durham
Staton, L. L.	Edgecombe
Speight, J. P.	Edgecombe
Shaffner, J. F.	Forsyth
Shaffner, J. F. Jr.	Forsyth
Spainhour, E. H.	Forsyth
Spencer, W. O.	Forsyth
Strickland, E. F.	Forsyth
Summers, C. L.	Forsyth
Sloan, J. M.	Gaston
Sanderford, J. F.	Granville
Sikes, G. T.	Granville
Stamy, E. L.	Greene
Scott, C. L.	Guilford
Stanton, D. A.	Guilford
Sexton, C. H.	Harnett
Smith, F.	Harnett
Stringfield, Thos.	Haywood
Stringfield, Sam L.	Haywood
Sulley, E. M.	Henderson-Polk
Sharpe, F. L.	Iredell-Alexander
Stevenson, S. W.	Iredell-Alexander
Self, Wm.	Jackson
Stanly, Jno. H.	Johnston
Smithwick, J. W. P.	Lenoir
Saine, Jno. W.	Lincoln
Siler, F. L.	Macon-Clay
Saunders, J. H.	Martin
Smithwick, J. E.	Martin
Simmons, Jno. O.	Mecklenburg
Slagel, F. P.	Mitchell
Sheppard, J. L.	Moore
Shields, H. B. Moore	Moore
Snipes, E. P.	Moore
Street, M. Eugene	Moore
Swett, W. P.	Moore
Shamberger, J. B.	Montgomery
Speight, R. H. Jr.	Nash
Strickland, J. T.	Nash
Schonwald, Jno. T.	New Hanover
Slocum, R. B.	New Hanover
Stancill, R. H.	Northampton
Sutton, C. W.	Onslow
Sawyer, C. W.,	Pasquotank-Camden-Dare
Sawyer, W. W.,	Pasquotank-Camden-Dare
Smith, R. W.	Perquimans
Swann, J. F.	Person
Schaub, O. P.	Person
Skinner, L. C.	Pitt
Summers, W. I.	Randolph
Steele, W. H.	Richmond
Stamps, Thos.	Robeson
Stephens, Wm. F.	Robeson
Sweany, Jno.	Rockingham
Sawyer, C. J.	Rowan
Smoot, M. L.	Rowan
Summerell, E. M.	Rowan
Stokes, J. E.	Rowan
Sikes, G. L.	Sampson
Sloan, Henry	Sampson
Stevens, J. A.	Sampson
Shaw, Daniel	Scotland
Shaw, Wm. G.	Scotland
Smith, J. T.	Stokes
Smith, J. B.	Surry
Stone, Wm. M.	Surry
Stevens, S. A.	Union
Stewart, H. D.	Union
Sorrell, L. P.	Wake
Stevens, Ralph S.	Wake
Speight, J. W.	Washington
Spicer, William	Wayne
Sutton, W. G.	Wayne
Sexton, J. A.	Wake
Somers, L. P.	Wilkes
Shore, Thad. W.	Yadkin
Salmons, H. C.	Yadkin
Tate, W. N.	Alamance
Tyson, T. D.	Alamance
Thompson, C. D.	Anson
Testerman, J. C.	Ashe
Tayloe, David T.	Beaufort
Tayloe, Joshua	Beaufort
Tayloe, Armistead K.	Beaufort
Tennent, G. S.	Buncombe
Taylor, I. M.	Burke

Name.	*County.*
Taylor, J. N.	Chatham
Thornton, Irene	Cumberland
Teague, R. J.	Durham
Thigpen, W. J.	Edgecombe
Turner, J. A.	Guilford
Turner, J. P.	Guilford
Thames, John	Guilford
Tankersley, J. W.	Guilford
Tull, Henry	Lenoir
Thompson, C. D.	Lincoln
Tilson, J. C.	Madison
Thomas, P. G.	New Hanover
Thomas, Geo. T.	New Hanover
Thompson, Cyrus	Onslow
Thigpen, G. T.	Pitt
Tuttle, A. F.	Rockingham
Thompson, N. A.	Robeson
Trantham, H. T.	Rowan
Twitty, J. C.	Rutherford
Twitty, T. B.	Rutherford
Thompson, J. B.	Rutherford
Thompson, W. A.	Rutherford
Taylor, W. I.	Sampson
Taylor, W. S.	Surry
Thompson, K.	Surry
Teague, J. H.	Swain
Tucker, Jno. H.	Vance
Templeton, Jas. M.	Wake
Thompson, S. W.	Wake
Tucker, H. McKee	Wake
Turner, J. M.	Wilkes
Utley, H. H.	Harnett
Underhill, H. P.	Pamlico
Utley, B. S.	Wake
Vestal, W. J.	Davidson
Vick, Geo. D.	Johnston
Valentine, Thos.	Northampton
Walker, W. E.	Alamance
Walker, L. A.	Alamance
Watson, Geo. S.	Alamance
Wyatt, J. L.	Anson
Windley, U. T.	Beaufort
Watson, D. I.	Brunswick
Weaver, H. B.	Buncombe
Whittington, W. P.	Buncombe
Williams, J. H.	Buncombe
Warlick, E. S.	Burke
Wallace, J. W.	Cabarrus
White, W. M.	Caldwell
Wilson, C. L.	Caldwell
Whitesides, B. F.	Catawba
Wilson, W. E.	Catawba
Webb, Ben. G.	Cherokee
Wood, J. W.	Cleveland
Withers, S. M.	Columbus
Willingham, B. J.	Cumberland
Watkins, T. T.	Davie
Williams, J. M.	Duplin
Ward, M. P.	Durham
Wilkerson, Chas. B.	Durham
Woodard, C. A.	Durham
Whitehead, J. P.	Edgecombe
Whitehead, W. H.	Edgecombe
Whittaker, W. H.	Edgecombe
Walton, C. B.	Edgecombe
Williams, J. D.	Forsyth
Wright, J. Thos.	Forsyth
Wheless, J. R.	Franklin
Wilkins, S. A.	Gaston
Wilson, F. G.	Gaston
Williams, Geo. D.	Gates
West, Albert	Greene
Whittington, W. W.	Greene
Watkins, G. S.	Granville
Wilson, A. R.	Guilford
Williams, Jno. R.	Guilford
Williams, Jno. A.	Guilford
Whittaker, A. C.	Guilford
Wills, J. M.	Guilford
Williams, B. B.	Guilford
Way, J. Howell	Haywood
Willis, A. P.	Haywood
Wilson, J. E.	Haywood
Waldrop, J. G.	Henderson-Polk
Ward, J. E.	Hertford
Windley, R. E.	Hyde
Williams, J. W.	Hyde
Wharton, L. D.	Johnston
Whittaker, R. A.	Lenoir
Woodley, C. B.	Lenoir
Wootten, R. W.	Lenoir
Whitaker, F. A.	Lenoir
Wright, J. V.	Lincoln
Weaver, W. J.	Madison
Woody, S. B.	Madison
Warren, W. E.	Martin
Wakefield, W. H.	Mecklenburg
Walker, C. E.	Mecklenburg
Whisnant, A. M.	Mecklenburg
Winchester, F. M.	Mecklenburg
Witherbee, W. D.	Mecklenburg
Wooten, W. H.	Mecklenburg
Wakefield, H. W.	Mecklenburg
Wilcox, J. W.	Moore
Watson, Leon	Moore-Lee
Wessell, J. C.	New Hanover
Wood, E. J.	New Hanover

Name.	*County.*
Whitehead, R. H.	Orange
Williams, Claude B.,	Pasquotank-Camden-Dare
Wood, J. E.,	Pasquotank-Camden-Dare
Walker, H. D.,	Pasquotank-Camden-Dare
Williams, R. J.	Pender
White, Thos. N.	Perquimans
Whitfield, W. C.	Pitt
Wilborn, W. R.	Randolph
Webb, W. P.	Richmond
Williamson, J. H.	Richmond
Wharton, C. R.	Rockingham
West, R. M.	Rowan
Whitehead, Jno.	Rowan
Withers, Banks	Rowan
Woodson, C. W.	Rowan
Wiseman, C. B.	Rutherford
Wilson, R. B.	Sampson
Whitley, D. P.	Stanly
Whitley, V. A.	Stanly
Woltz, J. L.	Surry
Woltz, J. R.	Surry
Wallis, W. J.	Transylvania
Whitley, A. D. N.	Union
Ward, W. H.	Washington
Whitaker, Joel	Wake
Wilkerson, C. B.	Wake
White, J. W.	Wilkes
Williams, A. F.	Wilson
York, N. D.	Alamance
Young, R. S.	Cabarrus
York, A. A.	Davidson
Yarborough, R. F.	Franklin
Young, E. M.	Iredell-Alexander
Young, J. J.	Johnston
York, H. B.	Martin
Young, J. W.	Rowan
Young, G. E.	Rutherford
Young, L. B.	Wake
Zimmerman, C. St. V.	Buncombe
Zimmerman, R. U.	Davidson
Zollicoffer, A. B.	Halifax
Zollicoffer, D. B.	Halifax

Members of the Component County Medical Societies of the Medical Society of the State of North Carolina, June 16, 1908.

(Gentlemen will confer a favor upon the Secretary by promptly advising of any errors, deaths, removals or other changes noted. It is desired to preserve the record as accurate as possible, *and it is to be remembered that it will be just so accurate as reported by the County Society officers and members.*)

ALAMANCE COUNTY SOCIETY.

Members and Address.	*Licensed.*	*Joined State Society.*
President, Wm. R. Goley, Graham Coll. P. & S., Balto., 1885.	1885	1893
Secretary, L. A. Walker, Burlington Univ. Coll. Med., Va., 1899.	1899	1904
Anderson, C. A., Burlington P. & S., Balto., 1900.	1893	1899
Faucette, Thos. S., Burlington Balto. Med. Coll., 1893.	1893	1896
Freeman, R. A., Burlington 1 1-2 course, Wash. Univ., Balto., 1879.	1879	1904
Montgomery, H. M., Burlington N. C. Med. Coll., 1903.	1903	1904
Moore, H. R., Burlington P. & S., Atlanta, 1899.	1899	1904
Page, J. W., Burlington P. & S., Balto.	....	1904
Pickett, J. A., Burlington, R. F. D. Univ. Nashville, 1894.	1894	1904
Stafford, W. G., Burlington Bellevue, N. Y., 1871.	1879	1890
Long, G. W., Graham Univ. Pa., 1877.	1877	1877
McPherson, J. W., Haw River Balto. Med. Coll., 1898.	1898	1898
McPherson, S. D., Haw River Univ. Md., 1903.	1903	1903
Tate, W. N., Mebane Louisv. Med. Coll., 1874.	....	1905
Tyson, T. D., Mebane Univ. Coll. Med., Va., 1899.	1899	1904
York, N. D., Mebane	....	1905
Mann, E. D., Saxapahaw	....	....
Parish, O. J., Graham Balto. Med. Coll., 1897.	1897	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Watson, Geo. S., Elon College P. & S., Balto., 1874.	....	1904
Walker, W. E., Graham Med. Coll., Va., 1903.	1903	1905

ANSON COUNTY SOCIETY.

President, J. M. Dunlap, Ansonville Univ. N. Y., 1876.	....	1904
Secretary, J. M. Covington, Jr., Wadesboro Med. Chi., Philadel., 1899.	1899	1904
Ashe, E. S., Wadesboro Coll. P. & S., Balto., 1885.	1885	1904
Barrett, W. W., Peachland Ky. Sch. Med., 1892.	1897	1904
Beckwith, R. B., Morven Vanderbilt Univ., 1883.	....	1904
Bennett, J. H., Wadesboro Univ. Md., 1894.	1894	1904
Carpenter, S. B., Cedar Hill Univ. N. Y., 1876.	....	1904
Covington, J. M., Wadesboro Med. Coll. S. C., 1874.	1879	1879
Hart, J. E., Deep Creek Univ. Md., 1897.	....	1904
Kerr, J. Edwin, Lilesville Univ. Md., 1898.	1898	1898
Meisenheimer, T. F., Morven Univ. N. Y., 1880.	1881	1881
Smith, L. C., Polkton Balto. Med. Coll., 1892.	....	1904
Thompson, C. D., Morven Univ. Tenn., 1901.	1901	1904
Wyatt, J. L., Lilesville	....	....

ASHE COUNTY SOCIETY.

President, J. W. Colvard, Jefferson Attended P. & S., Balto., 1 year, 1883.	....	1904
Secretary, J. L. Ballou, Shiprock, N. M. Univ. Nashville. 1901.	1902	1902
Barton, J. H., Weaver's Ford Registered on oath practice prior to 1885.	....	1904
Blevins, Manly, Beaver Creek Registered on oath practice prior to 1885.	....	1904
Call, T. J., Gap Creekmore Grad. P. & S., Balto. Registered on permit B'd. Exs. practice prior to 1885.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Jones, A. L., Brandon Univ. Coll. Med., Va., 1901.	1901	1904
Jones, T. J., Lansing Tenn. Med. Coll., 1895.	....	1904
Jones, R. W., Clifton	....	1904
Lemly, S. T., Todd	....	1904
Pennington, S. E., Sturgills P. & S., Balto., 1891.	1892	1904
Testerman, J. C., Jefferson	....	1904

BEAUFORT COUNTY SOCIETY.

President, P. A. Nicholson, Washington P. & S., Balto., 1889.	1889	1901
Secretary, Ira M. Hardy, Washington Med. Coll., Va., 1901.	1902	1902
Blount, W. A., Washington Bellevue Med. Coll., 1892.	1892	1894
Blount, J. G., Washington Bellevue Med. Coll., 1892.	1892	1893
Brown, E. M., Washington Bellevue Med. Coll., 1896.	1896	1901
Bullock, W. J., Belhaven Univ. Pa., 1858.	....	1904
Dixon, W. H., Edwards Med. Coll. Va., 1901.	1901	1901
Hunter, H. H., Pinetown Med. Coll. Va., 1900.	1901	1904
Kellum, W. D., Belhaven	....	1904
Mariner, N. B., Belhaven Univ. Coll. Med., Va.	1903	1904
Nicholson, J. L., Washington Univ. Med., 1904.	1904	1906
Nicholson, J. T., Bath P. & S., Balto., 1885.	1885	1904
Nicholson, S. T., Washington P. & S., Balto., 1881.	1885	1902
Rodman, John C., Washington Bellevue Med. Coll., 1892.	1892	1895
Small, W. P., Washington Univ. N. Y., 1875.	....	1905
Staley, S. W., Aurora Med. Coll. S. C., 1901.	1901	1904
Tayloe, D. T., Washington Bellevue Med., 1885.	1885	1885
Tayloe, Joshua, Washington Bellevue Med. Coll., 1892.	1892	1904

BERTIE COUNTY SOCIETY.

Members and Address.	*Licensed.*	*Joined State Society.*
Tayloe, Armistead K., Aurora Med. Coll., Va., 1897.	1896	1896
President, P. C. Jenkins, Roxobel Bellevue Med., 1873.	....	1904
Secretary, Jno. L. Pritchard, Windsor P. & S., Balto., 1906.	1906	1906
Mitchell, Wayland, Lewiston Univ. Md., 1895.	1896	1904
Horton, E. H., Aulander P. & S., Balto., 1884.	1885	1904
Harrell, W. J., Aulander P. & S., Balto., 1884.	1885	1892
Nowell, Luther A., Colerain Univ. Md., 1894.	1894	1905
Capehart, A., Roxobel Balto. Md. Coll., 1887.	1887	1905
Ruffin, J. B., Powellsville Univ. South, Sewanee, Tenn., 1898.	1906	1906

BLADEN COUNTY SOCIETY.

President, Geo. L. Clark, Clarkton Univ. N. Y., 1876.	....	1904
Secretary, Newton Robinson, Elizabethtown Univ. Pa., 1869.	....	1904
Evans, Dr. L. B., Clarkton Univ. Coll. Med., 1900.	1900	1904

BURKE COUNTY SOCIETY.

President, J. B. Riddle, Morganton Vanderbilt, 1898.	1904	1905
Secretary, Louis G. Beall, Morganton N. C. Med., 1906.	1906	1908
Anderson, Paul V., Morganton Univ. Va., 1904.	1904	1906
Hall, James K., Morganton Jeff. Med. Coll., 1904.	1906	1906
Hennessee, E. A., Glen Alpine U. S. Grant Univ., 1900.	1902	1904
McCampbell, John, Morganton Balto. Md., 1894.	1895	1899
Phifer, E. W., Morganton N. C. Med. Coll., 1901.	1902	1904
Taylor, Isaac M., Morganton P. & S., N. Y., 1882.	1883	1883
Warlick, E. S., Morganton Univ. Tenn., 1881.	....	1904

BUNCOMBE COUNTY SOCIETY.

Members and Address.	*Licensed.*	*Joined State Society.*
President, D. E. Sevier, Asheville Jeff. Med., 1895.	1895	1899
Secretary, G. S. Tennent, Asheville N. C. Med. Coll., 1894.	1894	1898
Ambler, C. P., Asheville West. Reserve Univ., O., 1889.	1890	1891
Anderson, J. G., Asheville Univ. N. C., 1906.	1907	1908
Archer, T. J., Black Mountain N. West Univ., 1896.	1905	1906
Ashworth, W. C., Asheville P. & S., Balto., 1902.	1892	....
Battle, S. W., Asheville Bellevue, N. Y., 1875.	....	1887
Briggs, H. H., Asheville Yale Univ., 1897.	1901	1903
Brookshire, H. G., Asheville, R. F. D., 5 N. C. Med., 1905.	1905	1906
Brown, T. E. W., Asheville P. & S., N. Y., 1900.	1905	1904
Brownson, W. C., Asheville Univ. N. Y., 1878.	....	1896
Buckner, R. G., Asheville Arkansas Univ., 1897.	1907	1908
Burroughs, J. A., Asheville Louis. Med., 1882.	1884	1889
Calloway, A. W., Asheville Chi. Homeop. Med. Coll., 1875.	1899	1904
Carroll, R. S., Asheville Rush Med. Coll., 1897.	1905	1906
Cheesborough, T. P., Asheville Univ. N. Y., 1891.	1891	1899
Clomenger, F. L., Asheville Univ. Denver, 1902.	1903	1904
Cocke, J. E., Asheville Louis. Med. Coll., 1905.	1905	1906
Cotton, C. E., Black Mountain Univ. Wooster, O., 1889.	1901	1901
Dunn, W. L., Asheville Univ. Mich., 1891.	1900	1900
Elias L. W., Asheville P. & S., N. Y., 1903.	1906	1906
Fletcher, M. H., Asheville Bellevue Med. Coll., 1881.	1881	1881
Glenn, E. B., Asheville Jeff. Med., 1896.	1896	1899
Hennell, M. H., Asheville Eclectic Med. Institute, Cincinnati, 1891.	1907	1908

Members and Address.	*Licensed.*	*Joined State Society.*
Johnson, A. E., Asheville Womans Med. Col., Pa., 1905.	1905	1907
Jordan, C. S., Asheville Univ. N. Y., 1890.	1891	1899
McBrayer, L. B., Asheville Louis. Med. Coll., 1889.	1891	1899
McCracken, C. M., Fairview Non-graduate N. C. Med. Coll., 1896.	1896	1904
Manville, W. E., Asheville George Washington Univ., 1904.	1906	1908
Meriwether, F. T., Asheville Univ. Louis., Ky., 1886.	1888	1888
Merrimon, L. A., Asheville Woman's Med. Coll., 1900.	1899	1904
Minor, C. L., Asheville Univ. Va., 1888.	1895	1898
Morris, E. R., Asheville Louis. Med. Coll.	1896	1899
Orr, C. C., Asheville Univ. Md., 1904.	1904	1905
Orr, P. B., Asheville Jeff. Med. Coll., 1901.	1901	1904
Paquin, P., Asheville Univ. Mo., 1887.	1899	1899
Pritchard, A. T., Asheville Jeff., Phila., 1905.	1905	1906
Purefoy, G. W., Asheville Jeff., Phila., 1876.	1884	1904
Reynolds, C. V., Asheville Univ. N. Y., 1895.	1895	1896
Reynolds, S. H., Asheville Louis. Med. Coll., 1903.	1903	1903
Ringer, P. H., Asheville P. & S., N. Y., 1904.	1906	1907
Ruck, K. von Asheville Univ. Mich., 1879.	1899	1902
Ruck, S. H., von, Asheville Bellevue, 1899.	1899	1902
Sawyer, J., Asheville Bellevue Med. Coll., 1897.	1897	1899
Sevier, J. T., Asheville Jeff. Med., 1895.	1895	1899
Smith, O., Asheville Jeff. Med., 1905.	1905	1906
Stevens, M. L., Asheville Balto. Med., 1891.	1892	1893

Members and Address.	*Licensed.*	*Joined State Society.*
Weaver, H. B., Asheville Wash. Univ. Med. Coll., Md., 1872.	1881	1881
Whittington, W. P., Asheville P. & S., Balto., 1882.	1882	1882
Williams, J. H., Asheville Univ. Iowa, 1862.	1881	1881
Eckel, O. F., Swannanoa Med. Coll. S. C., 1906.	1907	1908
Harris, I. A., Alexander, R. F. D. 2 1 Co. Jeff. Med. Coll.	1885	1881
Ragan, J. A., Weaverville Vanderbilt Univ., 1877.	....	1881
Reed, C. E., Banner Elk Jefferson Coll., 1905.	1902	1905
Zimmerman, C. St. V., Asheville Nat. Univ., D. C., 1895.	1903	1904
Morse, L. B., Chimney Rock Chicago Homop. Med. Coll., 1895.	1901	1901
Cassaway, S. F. Med. Coll. S. C., 1900.	1905	1906
Boyd, L., Montreat Woman's Med. Coll., Balto., 1907.	1907	1908

BRUNSWICK COUNTY SOCIETY.

President, E. G. Goodman, El Paso Univ. Md., 1891.	1891	1892
Secretary, J. Arthur Dosher, Southport Balto. Med. Coll., 1903.	1903	1903
Watson, D. I., Southport Univ. Louisville, Ky., 1890.	1890	1891
Moore, T. V., Phœnix Balto. Med., 1901.	1901	1901

CABARRUS COUNTY SOCIETY.

President, D. G. Caldwell, Concord Univ. Md.	1885	1885
Secretary, J. E. Smoot, Concord Baltimore, Md.	1901	1902
Archey, L. M., Concord P. & S., Balto.	1880	1888
Lafferty, J. S., Concord Univ. Md.	1881	1890
Wallace, J. W., Concord N. C. Med. Coll., 1907.	1907	1908
Black, J. C., Pioneer Mills Univ. Md.	1886	1891

Members and Address.	*Licensed.*	*Joined State Society.*
Gouger, G. J., Concord Univ. Md.	1891	1899
Young, R. S., Concord N. Y. Univ. Med. Coll.	1881	1882
Pharr, Theo. F., Concord Jeff. Med.	1875	1881
Pemberton, W. D., Concord Univ. of Md., 1887.	1887	1887
Matthews, J. M., Mt. Pleasant Univ. Tenn.	....	1899
King, R. M., Concord Jeff. Med., 1903.	1903	1905
Rogers, F. O., Concord Univ. Md., 1901.	1901	1901
Grier, S. A., Concord Jeff. Med. Coll., 1879.	....	1904
Burleyson, L. N., Concord Univ. Md., 1891.	1891	1904
Flower, J. W., Concord N. C. Med., 1898.	1903	1904
Barrier, P. A., (honorary), Mt. Pleasant Long Island Med. Coll., 1861.	1861	1861
Fail, M. A., Mt. Pleasant Jeff. Med., 1891.	1891	1908

CALDWELL COUNTY SOCIETY.

President, A. A. Kent, Lenoir Jeff. Med. Coll., 1885.	1885	1904
Secretary, W. P. Ivey, Lenoir Univ. Md., 1885.	1885	1891
Mattocks, C. J., Lenoir Med. Coll., Va., 1864.	....	1904
McNairy, C. B., Lenoir P. & S., Balto., 1893.	1893	1905
Wilson, C. L., Lenoir U. S. Grant Univ., 1903.	1903	1905
Moore, J. C., Lenoir Richmond, 1907.	1907	1908
Carter, G. H., King's Creek, R. F. D. Univ. N. Y., 1877.	....	1904
White, W. M., Collettsville P. & S., Atlanta, 1899.	1899	1904
Flowers, B. G., Granite Falls, R. F. D. Non.-Grad.; practice prior to 1885.	....	1904
Corpening, O. J., Granite Falls Univ. Coll. Med., Va., 1906.	1906	1906

Members and Address.	*Licensed.*	*Joined State Society.*
Flowers, G. E., Granite Falls Ico. So. Med. Coll.	....	1904
Stovy, J. G., Mortimer Tenn. Med., 1898.	1898	1908

CARTERET COUNTY SOCIETY.

President, Geo. Davis, Beaufort Ky. Sch. Med., 1906.	1902	1904
Secretary, K. P. B. Bonner, Morehead City Med. Coll. Va., 1905.	1905	1904
Adams, L. C., Atlantic N. C. Med. Coll., 1903.	1903	1906
Clark, F. M., Beaufort P. & S., Balto., 1894.	1894	1904
Duncan, C. L., Beaufort Univ. Md., 1902.	1902	1904
George, D. S., Marshallburg N. C. Med. Coll., 1903.	1903	1903
Headen, W. E., Morehead City Univ. Md., 1891.	1890	1891
Paul, W. T., Stacey Univ. Md., 1869.	....	1904
C. N. Mason, Harlowe P. & S., Balto., 1882.	....	1904

CASWELL COUNTY SOCIETY.

President, S. A. Malloy, Yanceyville Ky. School of Med., 1897.	1898	1903
Secretary, M. H. McBryde, Milton Univ. Coll. Med., 1901.	1901	1904
Badgett, J. F., Blackwell's P. & S., Baltimore, 1881.	....	1904

CATAWBA COUNTY SOCIETY.

President, J. T. Johnson, Hickory Univ. Pa., 1861.	....	1904
Secretary, T. F. Stevenson, Hickory Louis. Med. Coll., 1893.	1893	1905
Campbell, J. R., Newton Wash. Univ., Md., 1871.	....	1898
Wilson, W. E., Sherrill's Ford Louis. Med. Coll., 1886.	1886	1904
Abernathy, H. L., Hickory Louis. Med. Coll., 1886.	1887	1904
Shuford, J. H., Hickory Univ. Mich., 1901.	1902	1902

Members and Address.	*Licensed.*	*Joined State Society.*
Menzies, H. C., Hickory N. C. Med. Coll., 1904.	1894	1894
Whitesides, B. F., Hickory Univ. Md., 1877.	1881	1881
Abernathy, W. L., Hickory Ky. Sch. Med., 1877.	1879	1904
Long, F. Y., Catawba N. C. Med. Coll., 1899.	1898	1904
Blackburn, T. C., Hickory Baltimore Med. Coll., 1896.	1896	1908
Price, K. A., Hickory Univ. Va., 1907.	1907	1908

CHATHAM COUNTY SOCIETY.

President, R. W. Palmer, Gulf Louis. Med. Coll., 1890.	1891	1901
Secretary, H. T. Chapin, Pittsboro Louis. Med. Coll., 1890.	1886	1886
Burns, William, Goldstone Col. P. & S., Balto., 1878.	....	1905
Edwards, J. D., Siler City Louis. Med. Coll., 1887.	....	1894
Kirkman, T. A., Lindhurst	....	1905
*Taylor, J. N., Pittsboro Med. Coll. Va., 1901.	1902	1902

CHEROKEE COUNTY SOCIETY.

President, J. F. Abernathy, Murphy Ky. School Med., 1883.	1885	1904
Secretary, S. C. Highway, Murphy Med. Coll. Ohio, 1885.	1904	1904
Casteel, L. R. Culbertson Vanderbilt Univ., 1893.	1906	1906
Orr, R. J., Andrews Louisville Med. Coll., 1893.	....	1904
Patton, W. O., Murphy Coll. P. & S., Balto., 1883.	....	1904
Webb, B. G., Andrews Louisville Med. Coll., 1885.	1885	1904

CLEVELAND COUNTY SOCIETY.

President, W. T. Grigg, Shelby, R. F. D. Atlanta Med. Coll., 1891.	1904	1904
Secretary, B. H. Palmer, Shelby Louisville Med. Coll., 1896.	1898	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Ellis, R. C., Shelby Univ. of Balto., 1886.	....	1904
Lee, L. V., Lattimore Atlanta Med. Coll., 1894.	1897	1904
Mitchell, W. F., Shelby University of Md., 1899.	1900	1904
McKay, J. L., Kings Mountain University Phila., 1870.	....	1904
Royster, S. S., Mooresboro Tenn. Med., 1890.	1896	1904
Wood, J. W., Shelby, R. F. D.	1903	1904
Aydlette, J. P., Earls University Ky., 1901.	1903	1904
Champion, C. O., Mooresboro Atlanta Med. Coll., 1887.	1902	1904
Oats, Geo., Grover Univ. Louisville, Ky., 1894.	1896	1904
Lattimore, E. B., Shelby Bellevue Med. Coll., 1898.	1896	1908
McBrayer, T. E., Shelby Washington Univ., 1875.	....	1904
Morrison, R. R., Shelby N. C. Med. Coll., 1907.	1907	1908

COLUMBUS COUNTY SOCIETY.

President, W. F. Smith, Chadbourn N. C. Med. Coll., 1904.	1904	1905
Secretary, S. M. Withers, Chadbourn N. C. Med. Coll., 1902.	1902	1902
Blake, J. F., Chadbourn N. C. Med. Coll., 1905.	1905	1906
Crowell, W. H., Burgaw Univ. of Med., 1895.	1895	1896
Floyd, A. G., Fair Bluff Univ. Md., 1885.	....	1904
Maxwell, F. B., Whiteville Univ. Md., 1902.	1902	1902
Jordan, D. B., Cronly Jeff. Med., 1885.	....	1904
Johnson, T. C., Vineland Med. Coll. Va., 1903.	1903	1905

CRAVEN COUNTY SOCIETY.

President, Francis Duffy, New Bern Univ. Va., 1868.	1872	1872
Secretary, Joseph T. Patterson, New Bern Jeff. Med. Coll., 1906.	1906	1906

Members and Address.	*Licensed.*	*Joined State Society.*
Duffy, Chas., New Bern.... Univ. N. Y., 1859.	....	1870
Primrose, R. S., New Bern.... Bellevue Med. Coll., 1889.	1890	1904
Hughes, F. W., New Bern.... Univ. Pa., 1880.	1885	1904
Jones, R. D. V., New Bern.... Univ. Md., 1896.	1897	1904
Duffy, L., New Bern.... P. & S., Balto., 1889.	1889	1906
Rhem, J. F., New Bern.... Bellevue Med. Coll., 1894.	1893	1904
Gibbs, N. M., New Bern.... Univ. of Md., 1896.	1895	1907
Caton, G. A., New Bern.... Med. Coll. Va., 1898.	1898	1904

CUMBERLAND COUNTY SOCIETY.

President, J. V. McGougan, Fayetteville.... Univ. Med. Coll., 1893.	1893	1904
Secretary, Wm. S. Jordan, Fayetteville.... Univ. of N. C., 1906.	1906	1906
Hammond, A. F., Pollocksville.... Univ. Med. Coll., Va., 1903.	1903	1905
Duffy, R. N., New Bern.... Johns Hopkins, 1906.	1907	1908
Street, N. H., New Bern.... Univ. of N. Y., 1881.	1883	1884
Pollock, Raymon, Dover .... Jeff. Med. Coll., 1897.	1900	1900
Averitt, K. G., Cedar Creek.... Balto. Med. Coll., 1893.	1893	1902
Brown, Geo. W., Raeford.... Ky. School of Med., 1898.	1900	1904
Bullock, T. C., Autryville.... P. & S., Balto., 1885.	1885	1904
Dye, John C., Fayetteville.... N. C. Med. Coll., 1905.	1905	1906
Graham, Geo. A., Raeford.... Univ. of N. Y., 1876.	....	1904
Highsmith, J. F., Fayetteville.... Jeff. Med. Coll., 1889.	1889	1893
Highsmith, Seary, Fayetteville.... Univ. Coll. Med., Va., 1901.	1901	1902
Jordan, Wm. S., Fayetteville.... Univ. of N. C., 1906.	1906	1906
Lilly, J. M., Fayetteville.... Univ. Coll. Med., Va., 1903.	1903	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Marsh, J. H., Fayetteville Jeff. Med. Coll., 1889.	1889	1890
McGougan, J. V., Fayetteville Univ. of Med., Balto., 1893.	1893	1904
McKethan, John A., Fayetteville N. C. Med. Coll., 1901.	1901	1904
McNeill, J. W., Hope Mills Bellevue Hosp. Med. Coll., 1876.	1876	1876
Olive, P. W., Wade P. & S., Balto., 1907.	1907	1908
Rose, A. S., Fayetteville Univ. Coll. Med., Va., 1901.	1901	1904
Willingham, B. J., Hope Mills Med. Coll of Va.. 1906.	1907	1908
Thornton, Irene, Fayetteville Woman's Med. Coll. of Balto., Md., 1908.	1908	1908

CURRITUCK COUNTY SOCIETY.

President, H. M. Shaw, Shawboro Univ. Med., 1871.	....	1904
Secretary, Stuart M. Mann, Moyock P. & S., Balto., 1885.	1885	1904
Ritter, F. W., Moyock One Course P. & S., Balto., 1885.	1885	1885
Griggs, W. T., Poplar Branch Univ. Va., 1896.	1896	1901
Newbern, J. M., Jarvisburg Georgetown Univ., 1898.	1899	1904
Garrington, J. F., Coinjock	....	1904
Baum, Julian Coralla	....	1907

DAVIDSON COUNTY SOCIETY.

President, E. J. Buchanan, Lexington Univ. Md., 1892.	1892	1900
Secretary, D. J. Hill Lexington P. & S., Balto., 1893.	1893	1894
Vestal, W. J., Lexington P. & S., Balto., 1883.	....	1893
Clodfelter, C. M., Lexington P. & S., Balto., 1905.	1905	1906
Hill, Joel, Lexington P. & S., Balto., 1880.	1885	1886
Myers, J. A., Linwood, No. 2	....	....
Cathell, J. E., Linwood, No. 1 Univ. Md. 1899.	1902	1902
Hill, W. Lee, Lexington, No. 4 P. & S., Balto., 1893.	1893	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Zimmerman, R. U. Lexington, No. 4..... N. C. Med. Coll., 1901.	1901	1904
Julian, C. A., Thomasville..... Louis. Med. Coll., 1888.	1891	1893
Mock, J. H., Thomasville..... Med. Coll. Va., 1898.	1898	1904
Peacock, J. W., Thomasville..... Tulane Univ., 1901.	1901	1905
Anderson, A., Denton	....	1904
York, A. A. Linwood, R. F. D. No. 2..... Chatt. Med. Coll., 1907.	1907	1908
Mock, Frank L., Lexington.....	....	1908

DAVIE COUNTY SOCIETY.

President, M. D. Kimbrough, Mocksville..... Univ. Pa., 1860.	....	1904
Secretary, W. C. Martin, Mocksville..... P. & S., Balto., 1888.	1888	1904
Rodwell, J. W., Mocksville..... P. & S., Balto., 1896.	1895	1896
Martin, J. F., Advance, R. F. D.....	....	1908
Watkins T. T., Advance..... N. C. Med. Coll., 1896.	1896	1896
Byerly, A. B., Cooleemee..... Univ. Coll. Med., 1896.	1896	1904

DUPLIN COUNTY SOCIETY.

President, Jno. M. Faison, Faison..... Univ. Va., 1885.	1885	1885
Secretary, B. R. Graham, Wallace..... Univ. Va., 1895.	1895	1899
Hatcher, T. R., Rose Hill.....	....	....
Ferrell, J. A., Kenansville..... Univ. N. C., 1902.	1907	1908
Williams, J. M., Warsaw..... Univ. Md., 1902.	1902	1902
Hussey, L., Warsaw..... Univ. Pa., 1853.	....	1904
Lane, Jno. L., Warsaw..... N. C. Med. Coll., 1906.	1906	1906
Landen, J. F., Chinquapin..... Univ. Coll. Med., 1905.	1905	1907
Carroll, J. W., Wallace..... Univ. Md., 1903.	1903	1903
Carr, R. L., Magnolia..... Balto. Med. Coll., 1907.	1908	1908

Members and Address.	*Licensed.*	*Joined State Society.*
DURHAM COUNTY SOCIETY.		
President, Arch. Cheatham, Durham..... Univ. Md., 1888.	1888	1888
Secretary, C. A. Woodard, Durham..... Univ. Va., 1904.	1904	1907
Adams, C. A., Durham..... Coll. P. & S., Balto., 1892.	1892	1905
Boddie, N. P., Durham..... Coll. P. & S., Balto., 1883.	1883	1883
Bowling, E. H., Durham..... Coll. P. & S., Balto., 1891.	1890	1908
Brooks, B. U., Durham..... Univ. Md., 1905.	1905	1908
Felts, R. L., Durham ..... Univ. Md., 1898.	1899	1908
Graham, Jos., Durham ..... Univ. Pa. 1901.	1902	1906
Graham, W. A., Durham..... Univ. Pa., 1899.	1901	1901
Hicks, Wm. N., Durham..... Med. Coll. Va., 1864.	1885	1901
Hicks, C. S., Durham..... Univ. Md., 1904.	1904	1904
Holloway, R. L., West Durham..... Med. Coll. Va., 1893.	1893	1904
Johnson, N. M., Durham..... Wash. Univ. Md., 1876.	1879	1904
Jordan, A. C., Durham..... Coll. P. & S., Balto., 1881.	1885	1904
Manning, J. M., Durham..... Bellevue Med. Coll., 1882.	1884	1891
Mann, T. A., Durham..... Univ. Md. 1903.	1903	1903
Moore, R. A., Durham..... Univ. Md., 1891.	1897	1893
O'Kelly, J. M., Durham..... Ky. School Med., 1877.	1884	1883
Olive, W. W., Durham..... Univ. Md., 1906.	1907	1908
Ross, Geo. H., East Durham..... Univ. Tenn., 1899.	1899	1904
Smith, J. A., Durham..... Univ. N. Y., 1883.	1884	1905
Teague, R. J., Durham..... Univ. Md., 1890.	1890	1898
Ward, M. P., Holloway.....	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
EDGECOMBE COUNTY SOCIETY.		
President, J. J. Phillips, Tarboro P. & S., N. Y., 1894.	1905	1905
Secretary, S. N. Harrell, Tarboro Univ. Md., 1897.	1907	1904
Staton, L. L., Tarboro Univ. N. Y., 1870.	1870	1900
Baker, J. M., Tarboro Univ. Md. 1879.	1879	1879
Thigpen, W. J., Tarboro Jeff. Med. Coll., 1900.	1900	1901
Mercer, W. P., Elm City Univ. N. Y., 1879.	1879	1904
Bass, S. P., Tarboro Univ. Va., 1906.	1907	1908
Speight, J. P., Whitakers, R. F. D. Jeff. Med. Coll., 1905.	1905	1908
Walton, C. B. Macclesfield Univ. Md., 1893.	1893	1907
Brothers, J. E., Conetoe Bellevue Med. Coll., 1874.	....	1906
FORSYTH COUNTY SOCIETY.		
President, D. N. Dalton, Winston-Salem Univ. N. Y., 1881.	1885	1886
Secretary, E. P. Gray, Winston-Salem Johns Hopkins Med. Sch., 1906.	1907	1908
Summers, C. L., Winston-Salem Univ. Md., 1887.	1891	1896
Fearrington, J. P., Winston-Salem Univ. Md., 1887.	1887	1904
Spencer, W. O., Winston-Salem Jefferson Med., 1891.	1891	1894
Shaffner, J. F., Jr., Winston-Salem Univ. Va., 1899.	1900	1903
Bynum, Jno., Winston-Salem Univ. N. Y., 1892.	1892	1896
Kapp, H. H., Winston-Salem Jeff. Med. Coll., 1901.	1901	1904
Pfohl, S. F., Winston-Salem Univ. Pa., 1894.	1898	1898
Bahnson, H. T., Winston-Salem Univ. Pa., 1867.	1869	1869
Jewett, R. D., Winston-Salem Univ. Va., 1888.	1890	1890
Lott, H. S., Winston-Salem Univ. Ga., 1884.	1888	1888

Members and Address.	*Licensed.*	*Joined State Society.*
Wright, J. T., Winston-Salem P. & S., Balto., 1892.	1892	1904
Spainhour, E. H., Winston-Salem Balto. Med. Coll., 1898.	1898	1898
Davis, A. P., Winston-Salem Ky. Sch. Med., 1894; Geo. Wash. Univ., 1906.	1896	1904
Strickland, E. F., Bethania Univ. N. Y., 1887.	1887	1903
Hammock, J. C., Walkertown P. &. S., Balto., 1895.	1895	1907
Hanes, J. L. Winston-Salem Univ. Md., 1902.	1902	1902
Bynum, Wade H., Germanton Univ. Coll. Med., Va., 1900.	1900	1900
Linville, A. Y., Winston-Salem Univ. N. Y., 1889.	1889	1896
Williams, J. D., Lewisville Vanderbilt, 1898.	1898	1898
Lockett, E. A., Winston-Salem Univ. Pa., 1902.	1904	1904
Copple, I. M., Winston-Salem Univ. Md., 1900.	1899	1905
Davis, J. W., Vienna Med. Coll. Va., 1903.	1903	1905
Dalton, W. N., Winston-Salem	....	....
Justice, J. T., Kernersville N. C. Med. Coll., 1904.	1904	....
Carlton, R. L., Kernersville Univ. Md., 1906.	1906	....
Davis, T. W., Winston-Salem	....	....
Flynt, S. S., Rural Hall P. & S., Balto., 1889.	1890	1906
Shaffner, J. F., Sr., Winston-Salem (Hon.) Jeff. Med. Coll., 1860.	....	1867
Fulp, E., Fulp (Stokes Co.), (Hon.) Univ. of N. Y., 1882.	....	1896
Griffith, J. F., Clemmonsville	....	....
Pepper J. K., Winston-Salem Coll. P. & S., Balto., 1907.	1908	1908
Hammock, J. C., Walkertown Coll. P. & S., Balto., 1905.	1905	1908

FRANKLIN COUNTY SOCIETY.

President, J. E. Malone, Louisburg Bellevue Med., 1875.	....	1904
Secretary, S. P. Burt, Louisburg P. & S., Balto., 1896.	1896	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Yarborough, R. F., Louisburg Columbia Univ., D. C., 1898.	1899	1899
Newell, H. A., Louisburg P. & S., Balto., 1906.	1906	1906
Mann, J. J., Louisburg Non-grad. Balto. Med.	1886	1904
Floyd, R. P., Louisburg, R. F. D. No. 1 S. C. Med. Coll., 1878.	....	1904
Bobbitt, E. H., Louisburg, R. F. D. No. 4 Univ. Md., 1883.	1885	1908
Henderson, R. B., Franklinton Univ. Md., 1887.	1887	1904
Harris, J. H., Franklinton Bellevue Med., 1887.	1887	1904
Wheless, J. R., Centerville P. & S., Balto., 1891.	1891	1904

GASTON COUNTY SOCIETY.

President, J. M. Sloan, Gastonia Louisville Med. Coll., 1891.	1891	1904
Secretary, H. F. Glenn, Gastonia P. & S., Atlanta, 1900.	1900	1904
Adams, C. E., Gastonia Univ. Md., 1878.	1885	1904
Anders, McT. G., Gastonia Md. Med. Coll., 1901.	1902	1902
Davis, W. W., Belmont Ky. School Med., 1875.	....	1904
Eddleman, H. M., Gastonia Ky. School Med., 1886.	....	1904
Garren, R. H., Bessemer Univ. of Nashville, 1900.	1901	1904
Garrison, D. A., Bessemer City Louisville Med. Coll., 1896.	1896	1899
Hunter, M. C., Stanley P. & S., Balto., 1882.	1882	1904
Jenkins, J. H., Dallas Ky. School Med., 1888.	1888	1904
McLain, Chas. E., Gastonia N. C. Med Coll., 1903.	1904	1905
Patrick, G. R., Lowell Univ. Md., 1879.	....	1904
Quickel, T. C., Stanley Tulane Univ., 1899.	1899	1904
Reid, R. M., Gastonia Univ. N. Y., 1890.	1890	1903
Robinson, Frank, Lowell Louisville Med. Coll., 1878.	1881	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Sloan, J. M., Gastonia Louisville Med. Coll., 1891.	1891	1904
Wilkins, S. A., Dallas Univ. Ky., 1902.	1903	1903
Wilson, F. G., Gastonia Univ. Md., 1896.	1896	1899
McCombs, C. J., King's Mountain N. C. Med. Coll., 1905.	1905	1908
Rhyne, R. E. O., Mt. Holly	....	1908

GRAHAM COUNTY SOCIETY.

President, M. F. Maxwell, Robbinsville Southern Med. Coll., 1885.	....	1904
Secretary, G. F. Brock, Brock Registered on oath.	....	1904
Howell, S. F., Robbinsville Registered on oath.	....	1904
Hooper, L. D., Robbinsville, R. F. D. Registered on oath.	....	1904

GATES COUNTY SOCIETY.

President, Geo. D. Williams, Gatesville P. & S., Balto., 1897.	1897	1904
Secretary, Geo. C. Brooks, Sunbury P. & S., Balto., 1884.	....	1904
Corbell, E. F., Sunbury Univ. Md., 1886.	1893	1900
Lee, W. O. P., Reynoldson P. & S., Balto., 1874.	....	1904

GREENE COUNTY SOCIETY.

President, Albert West, Speight's Bridge Cincinnati Med. Coll., 1887.	....	1904
Secretary, G. C. Edwards, Hookerton Bellevue, N. Y., 1883.	1883	1883
Murphy, W. B., Snow Hill Univ. Med. Coll., Va., 1903.	1903	1905
Harper, J. H., Snow Hill Jeff. Med. Coll., 1906.	1906	1906
Whittington, W. W., Snow Hill Louisville Med. Coll., 1895.	1895	1897
Stamey, E. L., Ormondsville Atlanta Med., 1895.	1895	1904

GRANVILLE COUNTY SOCIETY.

President, S. D. Booth, Oxford 1 Course Med. Coll., Va., 1867.	1885	1885

Members and Address.	*Licensed.*	*Joined State Society.*
Secretary, Benj. K. Hays, Oxford Univ. Coll. Med., Va., 1894.	1894	1896
Coggeshall, G. A., Oxford Bellevue Med. Coll., 1879.	1879	1894
Meadows, E. B., Oxford, R. F. D. No. 1 Univ. Coll. Med., 1901.	1901	1901
Morris, J. A., Oxford, R. F. D., No. 2 Vanderbilt Univ., 1893.	1893	1899
Sanderford, J. F., Creedmoor P. & S., Balto., 1890.	1890	1891
Watkins, G. S., Oxford Univ. Coll. Med., Va., 1900.	1900	1908
Hardee, P. R., Stem P. & S., Balto., 1885.	1885	1906
Sikes, G. T., Grissom Univ. Md., 1884.	1884	1884

GUILFORD COUNTY SOCIETY.

President, J. R. Williams, Greensboro Univ. Mich., 1903.	1904	1904
Secretary, E. Harrison, Greensboro Univ. Coll. Med., 1896.	1900	1900
Armfield, D. A., Jamestown Jeff. Med. Coll., 1861.	1889	1904
Banner, C. W., Greensboro Univ. Med., 1899.	1899	1901
Battle, J. T. J., Greensboro P. & S., Balto., 1884.	1884	1889
Beall, W. P., Greensboro Jeff. Med., 1879.	1879	1879
Brooks, J. E., Greensboro Univ. Coll. Med., Va., 1897.	1897	1904
Brooks, Z. T. Greensboro Jefferson, 1868.	....	1901
Boyles, J. H., Greensboro P. & S., Balto., 1903.	1903	1904
Bowman, W. P., Greensboro Univ. of Tenn., 1894.	1894	1904
Burrus, J. T., High Point Grant Univ., 1898.	1897	1898
Coble, W. A., Hartshorn Jeff. Med. Coll., 1889.	1889	1907
Davis, W. C., Summerfield Univ. Balto., 1896.	1889	1904
Dees, R. O., Greensboro Univ. of Md., 1906.	1907	1908
Dick, J. V., Gibsonville Univ. of N. C., 1907.	1907	1908

Members and Address.	*Licensed.*	*Joined State Society.*
Dodson, H. H., Greensboro Med. Coll. of Va., 1882.	1885	1886
Duncan, G. F., High Point Balto. Univ. S. of Med., 1902.	1898	1907
Farrar, M. R., Greensboro Univ. N. C., 1905.	1905	1906
Fortune, A. F., Greensboro Univ. Coll. Med., 1900.	1900	1904
Foscue, J. E., Jamestown Univ. of Md., 1903.	1903	1907
Fox, M. F., Guilford College P. & S., Balto., 1881.	1885	1885
Gilmer, C. S. Greensboro, R. F. D. Univ. N. Y., 1891.	1891	1894
Glascock, J. H., Greensboro Woman's Med. Coll., Balto., 1896.	1896	1898
Gordon, J. R., Jamestown P. & S., Balto., 1891.	1896	1894
Gove, A. M., Greensboro Woman's Med. Coll., N. Y., 1891.	1894	1905
Gray, C., Pleasant Garden	....	1904
Grayson, C. S., High Point Geo. Wash. Univ., 1906.	1907	1908
Grimsley, J. E., Greensboro Univ. Va., 1883.	1883	1884
Hilton, J. J., Greensboro Univ. Md., 1886.	1889	1904
Holt, J. T., McLeansville	....	1906
Jarboe, J. P., Greensboro Georgetown, 1905.	1906	1907
Jones, J. W., Brown Summit Mo. Med. Coll., 1875.	1889	1904
Jones, W. M., High Point Univ. Md., 1903.	1905	1906
Jordan, G. E., Gibsonville P. & S., Balto., 1891.	1891	1904
Kernodle, G. W., Greensboro, R .F. D. P. & S., Balto., 1886.	1886	1905
Knight, W. P., Greensboro, R. F. D. Balto., Med. Coll., 1898.	1898	1898
Ledbetter A. E., Greensboro Univ. Md., 1888.	1888	1904
Little, T. R., Greensboro Univ. Pa., 1900.	1903	1903
Logan, J. E., Greensboro Jeff. Med. Coll., 1905.	1889	1905
Long, J. W., Greensboro Vandervilt Univ., 1883.	1884	1884

Members and Address.	*Licensed.*	*Joined State Society.*
McAnally, W. J., High Point Balto. Med. Coll., 1897.	1896	1899
Meadows, W. J., Greensboro Med. Coll. Ala., 1894.	1899	1904
Michaux, E. R., Greensboro Univ. N. Y., 1889.	1889	1904
Miles, M. S., Greensboro Wom. Med., Cin., O., 1898.	1904	1905
Moseley, C. W., Greensboro Balto. Med. 1893.	1893	1896
Reaves, W. P., Greensboro Univ. of So., 1903.	1905	1907
Reitzel, C. E., High Point P. &. S., Ga.	1902	1902
Reitzel, J. R., High Point Univ. Tenn., 1892.	1895	1896
Richardson, W. J., Greensboro Jeff. Med. Coll., 1889.	1889	1904
Roberson, Chas., Greensboro Long Is. Med. Coll., 1897.	1897	1901
Scott, C. L., Greensboro Univ. Md., 1897.	1899	1903
Stanton, D. A., High Point Vanderbilt Univ. 1887.	1887	1891
Tankersley, J. W., Greensboro Jeff. Med. Coll., 1906.	1906	1907
Turner, J. A., High Point Louisv. Med. Coll., 1886.	1889	1891
Turner, J. P., Greensboro Univ. Md., 1896.	1897	1904
Wells, J. M., Pleasant Garden Univ. of N. C., 1905.	1905	1907
Whittaker, A. C., Julian Univ. Tenn., 1903.	1903	1908
Williams, J. A., Greensboro Univ. Va., 1898.	1898	1898
Wilson, A. R., Greensboro Jeff. Med. Coll., 1882.	1882	1882
Rieves, J. T., Greensboro Louisv. Med. Coll., 1891.	1892	1894
Paddison, J. R., Oak Ridge Univ. Md., 1902.	1902	1904
Norman, G. W., Pomona Balto Med. Coll., 1896.	1896	1908
Williams, B. B., Greensboro Univ. Md., 1883.	1886	1908

Members and Address.	*Licensed.*	*Joined State Society.*
HALIFAX COUNTY SOCIETY.		
President, John A. Collins, Enfield Bellevue Med. Coll., 1869.	1880	1904
Secretary, A. S. Harrison, Enfield Univ. Md., 1888.	1888	1904
Ferguson, H. B., Halifax Jeff. Med. Coll., 1882.	1882	1904
Green, J. E., Weldon	1873	1904
Leggett, K., Hobgood Ky. School Med., 1884.	1885	1885
Pierce, S. B., Roanoke Rapids Bellevue Med. Coll., 1897.	1897	1905
Register, F. M., Tillery Ky. School Med., 1893.	1891	1904
Zollicoffer, A. B., Weldon Univ. Pa., 1875.	....	1904
Zollicoffer, D. B., Weldon P. & S., Balto., 1886.	1886	1904
Hyatt, O. C., Waycross, Ga	....	1908
HARNETT COUNTY SOCIETY.		
President, F. T. Moore, Benson P. & S., Balto., 1885.	....	1904
Secretary, S. P. J. Lee, Dunn Md. Med. Coll., 1904.	1904	1905
Highsmith, Chas., Dunn Balto. Med., 1898.	1898	1898
Sexton, C. H., Dunn Univ. Md., 1890.	1890	1904
Denning, O. L., Dunn Jeff. Med. Coll., 1889.	1897	1904
Hudson, W. L., Dunn Ky. School Med., 1876.	1883	1894
Hicks, I. F., Dunn N. C. Med. 1902.	1902	1904
Holt, Wm. P., Duke Jeff. Med. Coll., 1895.	1895	1901
Boyles, A. C., Dulve Univ. Md.	1904	1908
McKay, J. F., Buie's Creek S. C. Med. Coll., 1884.	1885	1904
Halford, J. W., Chalybeate Springs Columbian Univ., Washington, D. C., 1904.	1905	1906
Arnold, L. J., Lillington N. C. Med. Coll., 1905.	1905	1906
Melvin, W. C., Linden Univ. Coll. Med., Va., 1900.	1900	1905

Members and Address.	*Licensed.*	*Joined State Society.*
Smith, F., Linden..... S. C. Med. Coll., 1868.	....	1905
Utley, H. H., Coats..... Balto. Med. Coll., 1906.	1906	1907
McLean, J. W., Godwin..... N. C. Med., 1902.	1902	1902
Rowland, W. H., Benson..... Non-graduate.	....	1904

HAYWOOD COUNTY SOCIETY.

President, R. L. Allen, Waynesville..... Univ. Md., 1885.	1885	1899
Secretary, J. Howell Way, Waynesville..... Vanderbilt Univ., 1886.	1885	1886
Able, J. F., Waynesville..... Univ. Balto., 1892.	1893	1899
Davis, F. M., Clyde..... Vanderbilt Univ., 1894.	1894	1904
McCracken, J. R., Waynesville..... N. C. Med., 1902.	1902	1903
Mease, J. H., Canton..... Vanderbilt Univ., 1893.	1893	1894
Greenwood, B. H., Waynesville..... Balto. Med., 1893.	1894	1906
Graham, W. A., Frie's Creek..... Vanderbilt Univ., 1 Co. Registered on oath, 1906.	....	....
Rich, John Calvin, Dellwood..... Univ. of Nashville, 1908.	1908	1908
Stringfield, Thomas, Waynesville..... Vanderbilt Univ., 1898.	1898	1899
Stringfield, S. L., Waynesville..... Jeff. Med. Coll., 1905.	1905	1906
Willis, A. P., Canton..... Univ. N. C., 1905.	1905	1906
Wilson, J. E., Sonoma..... 1 Co. Louisv. Med. Coll., 1876.	....	1903
Hyatt, Fred. C., Canton..... Jeff. Med. Coll., 1907.	1907	1907
Rogers, McLean Gear, Okla..... P. & S., Atlanta, 1902.	1902	1905
Moore, J. E., Canton..... Tenn. Med., 1899.	1898	1899
Kirkpatrick, Wm. L., Pacolet, S. C..... Vanderbilt Univ., 1894.	1894	1895
McFayden, H. L., Waynesville..... Univ. N. Y., 1876.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
HENDERSON-POLK COUNTY SOCIETY.		
President, Guy E. Dixon, Hendersonville St. Louis. Coll. of P. & S., 1903.	1903	1903
Secretary, J. Steven Brown, Hendersonville Northwestern Univ., 1893.	1894	1895
Allen, T. A., Hendersonville S. C. Med. Coll.	....	1904
Few, C., Hendersonville Univ. Md., 1875.	....	1904
Egerton, J. L., Hendersonville Univ. Md., 1877.	....	1890
Drafts, A. B., Hendersonville Univ. Va., 1896.	1899	1903
Kirk, Wm. R., Hendersonville Central Univ. of Ky., 1890.	1901	1903
Waldrop, J. G., Hendersonville P. & S., Balto., 1876.	....	1891
Howe, W. B. W., Hendersonville Med. Coll. of S. C., 1906.	1907	1908
Grady, Earle, Tryon Univ. Md., 1894.	1895	1899
Greenwood, S. E., Fletcher Tenn. Med. Coll., 1902.	1903	1904
Russell, L. P., Fletcher Univ. Nashville, 1901.	1902	1903
Salley, E. M., Saluda Univ. Md., 1905.	1905	1906
Hood, J. S., Horseshoe Jeff. Med. Coll., 1907.	1907	1908
Guerrard A. R., Flat Rock Bellevue Med. Coll., 1895.	1902	1905
HERTFORD COUNTY SOCIETY.		
President, C. F. Griffin, Winton P. & S., Balto., 1893.	1893	1900
Secretary, A. W. Greene, Ahoskie Univ. Coll. Med., Va., 1904.	1904	1905
Pollard, W. B., Winton P. & S., Balto., 1893.	1893	1905
Freeman, W. G., Murfreesboro Univ. Pa., 1861.	....	1904
Burbage, T. J., Como Memphis Hosp. Coll. Med., 1882.	....	1905
Gary, R. H., Murfreesboro P. & S., Balto., 1881.	....	1904
Mitchell, J. H., Ahoskie P. & S., Balto., 1879.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Mitchell, Paul, Ahoskie Univ. Coll. Med., Va., 1907.	1907	1908
Ward, J. E., Harrellsville Univ. Md., 1904.	1904	1905

HYDE COUNTY SOCIETY.

President, E. H. Jones, Swan Quarter, R. F. D. Washington Univ., 1872.	....	....
Secretary, John W. Williams, Scranton Univ. Md., 1906.	1906	1907
Windley, R. E., Lake Landing Univ. Md., 1903.	1904	1907
Mann, J. A., Fairfield Univ. N. Y. City, 1872.	....	....
Harris, A. G., Fairfield Univ. of South, 1905.	1907	1908
Mann, J. E., Lake Landing Univ. Md., 1907.	1908	1908

IREDELL-ALEXANDER COUNTY SOCIETY.

President, Thos. E. Anderson, Statesville Jeff. Med. Coll., 1878.	1879	1879
Secretary, J. E. McLaughlin, Statesville Univ. Md., 1886.	1886	1896
Adams, M. R., Statesville Univ. Md., 1878.	1884	1884
Bell, A. E., Mooresville Univ. Md., 1889.	1897	1904
Cloaninger, L. V., New Stirling N. C. Med. Coll., 1901.	1901	1904
Hall, E. A., Statesville, R. F. D. No. 4 Univ. of Md., 1868.	....	1904
Jurney, P. C., Turnersburg Med. Coll. Va., 1901.	1901	1904
Klutz, E. E., Troutman Med. Coll. Va., 1884.	....	1896
King, J. E., Statesville, R. F. D. No. 5 Jeff. Med. Coll., 1868.	....	1904
Long, H. F., Statesville Univ. Md., 1892.	1892	1899
Moore, N. G., Mooresville Jeff. Med. Coll., 1891.	1891	1904
Moore, J. T., Mooresville, R. F. D. No. 2 N. C. Med., 1898.	1898	1905
Nicholson, W. G., Harmony Louisv. Med. Coll., 1881.	....	1904

JOHNSTON COUNTY SOCIETY.

Members and Address.	*Licensed.*	*Joined State Society.*
Stevenson, S. W., Mooresville Wash. Univ., Md., 1873.	1879	1904
Yount, E. M., Statesville N. C. Med. Coll., 1902.	1902	1902
Houck, Albert, Statesville P. & S., Balto., 1884.	1891	1893
Sharpe, F. L., Statesville Univ. Coll. Med., 1904.	1904	1905
Carpenter, F. A., Mooresville N. C. Med. Coll., 1906.	1906	1907
Campbell, Arch., Statesville Univ. Md., 1899.	1891	1905
Campbell, R. A. (U. S. Navy), Statesville N. C. Med. Coll., 1897.	1897	1908
Hill, W. J., Statesville Univ. Md., 1889.	1891	1908

JACKSON COUNTY SOCIETY.

President, A. A. Nichols, Painter Univ. Nashville, 1898.	1904	1904
Secretary, D. D. Hooper, Sylva Univ. Coll. Med., Va., 1905.	1905	1905
Candler, Chas. Z., Dillsboro P. & S., Atlanta, 1901.	1901	1904
Candler J. M., Dillsboro	....	1904
Self, Wm., Webster	....	1904
President, A. H. Rose, Smithfield Jeff. Med. Coll., 1906.	1906	1906
Secretary, G. D. Vick, Selma Jeff. Med. Coll., 1906.	1906	1906
Wharton, L. D., Smithfield Tulane Univ., 1893.	1893	1894
Hooks, Thel, Smithfield Med. Coll. Va., 1901.	1901	1903
Robinson, G. J., Smithfield Jeff. Med. Coll., 1882.	1884	1884
Mimms, L. A., Smithfield P. & S., Balto., 1888.	1888	1904
Young, J. J., Clayton P. & S., Balto., 1896.	1896	1904
Griffin, J. A., Clayton P. & S., Balto.	....	1905
Hocutt, B. A., Clayton Univ. N. C., 1906.	1906	1907
Stanley, J. H., Four Oaks Univ. N. C., 1904.	1904	1906

Members and Address.	*Licensed.*	*Joined State Society.*
Person, J. B., Selma Med. Coll. Va., 1897.	1897	1900
Noble, R. J., Selma Ky. School Med., 1875.	1878	1878
Noble, Robt. P., Selma Univ. of N. C., 1907.	1907	1908
Parker, G. E., Benson P. & S., Balto., 1885.	....	1904
Booker, E. N., Clayton, R. F. D. Med. Coll. Va., 1887.	1888	....
McLemore, G. A., Clayton, R. F. D. Univ. N. C., 1906.	1906	....
Grady, J. C., Kenly P. & S., Balto., 1886.	....	1904
Coleman, G. S., Kenly Med. Coll. Va., 1907.	1907	1908

LENOIR COUNTY SOCIETY.

President, W. T. Parrott, Kinston Tulane Univ., 1899.	1899	1901
Secretary, C. L. Pridgen, Kinston Jeff. Med. Coll., 1901.	1901	1901
Woodley, C. B., Kinston Bellevue Med. Coll., 1886.	1886	1904
Tull, Henry, Kinston Univ. Pa., 1876.	1876	1876
Parrott, J. M., Kinston Tulane Univ., 1895.	1895	1896
Parrott, A. DeK., Kinston Univ. Coll. Med., Va., 1906.	1906	1906
Whitaker, F. A., Kinston 1 Co. Univ. Pa., 1875.	....	1907
Whitaker, R. A., Kinston P. & S., Balto., 1885.	1885	1885
Hargrove, W. F., Kinston Univ. Md., 1901.	1901	1901
Wooten, R. W., Kinston Univ. Va., 1870.	....	1904
Monk, H. S., Trenton Med. Coll. Va., 1896.	1896	1904
Hodges, J. M., La Grange Bellevue Med. Coll., 1883.	1883	1904
Smithwick, J. W. P., La Grange Univ. Md., 1895.	1894	1898
Denny, W. W., Pink Hill (honorary)	....	....

Members and Address.	*Licensed.*	*Joined State Society.*
LINCOLN COUNTY SOCIETY.		
President, C. H. Hoover, Crouse Balto. Med. Coll., 1893.	1903	1904
Secretary, R. W. Petrie, Lincolnton Univ. Md., 1903.	1903	1903
Crowell, L. A., Lincolnton Balto. Med. Coll., 1892.	1892	1898
Wright, J. B., Lincolnton Univ. Coll. Med., Va., 1899.	1899	1899
Costner, G. H., Lincolnton Univ. of Md., 1901.	1902	1907
Saine, Jno. W., Lincolnton Louisv. Med. Coll., 1891.	1891	1904
Abernathy H. U., Devon Louisv. Med. Coll., 1894.	1894	1898
Thompson, C. D., Lowesville Univ. Tenn., 1901.	1901	1904
MACON-CLAY COUNTY SOCIETY.		
President, S. H. Lyle, Franklin Univ. Nashville, 1881.	1881	1881
Secretary, W. A. Rogers, Franklin Univ. Nashville, 1898.	1898	1898
Siler, F. L., Franklin Univ. Nashville, 1897.	1898	1908
Jones, H. M., Franklin Univ. N. C., 1905.	1906	1906
Lapham, Mary E., Highlands Woman's Med. Coll. of Pa., 1900.	1906	1908
MADISON COUNTY SOCIETY.		
President, W. J. Weaver, Marshall Jeff. Med. Coll., 1898.	1897	1903
Secretary, I. E. Burnett, Mars Hill Tenn. Med. Coll., 1901.	1904	1904
English, I. L., English	....	1904
Frisbee, J. T., Lynch	....	1904
McDevitt, A. J., Walnut	1905	1906
Roberts, Frank, Marshall Jeff. Med. Coll., 1892.	1892	1902
Robinson, W. F., Mars Hill Vand. Univ., 1896.	1903	1904
Tilson, J. C., Marshall 1 Co. P. & S., Balto., 1884-5.	1885	1904
Woody, S. B., Spring Creek Vand. Univ., 1892.	1898	1898

Members and Address.	*Licensed.*	*Joined State Society.*
Baird, J. H., Mars Hill	....	1904
Peck, E. J., Hot Springs Vand. Univ., 1879.	....	1907

MARTIN COUNTY SOCIETY.

President, J. E. Smithwick, Jamesville Univ. Md., 1897.	1897	1904
Secretary, Wm. E. Warren, Williamston Non-grad. Univ. N. Y.	1893	1904
Knight, J. B. H., Williamston P. & S., Balto., 1885.	1885	1891
York, H. B., Williamston Coll. P. & S., Balto., 1906.	1906	1906
Rhodes, J. S., Williamston Med. Coll. Va., Richmond, 1906.	1906	1906
Long, B. L., Hamilton Univ. Md., 1880.	....	1904
Fleming, M. I., Hamilton Jeff. Med., Phila., 1906.	1906	1906
Hargrove, W. H., Robersonville Univ. Md., 1877.	1879	1879
Nelson, R. J., Robersonville Louisv. Med. Coll., 1890.	1890	1893
Saunders, Jos. H., Everetts Univ. Coll. Med., Richmond, 1905.	1905	1906

MECKLENBURG COUNTY SOCIETY.

President, C. A., Misenheimer, Charlotte Univ. N. Y., 1882.	1882	1882
Secretary, Robt. H. Lafferty, Charlotte N. C. Med. Coll., 1906.	1906	1906
Alexander, Annie L., Charlotte Woman's Med. Coll. Pa., 1884.	1885	1885
Alexander, H. Q., Charlotte Univ. Md., 1888.	1888	1904
Alexander, J. R., Matthews Univ. Md., 1894.	1894	1898
Austin, J. A., Charlotte Jeff. Med. Coll., 1887.	1887	1887
Austin, Fred., Charlotte N. C. Med., 1907.	1907	1908
Crowell, A. J., Charlotte Univ. Md., 1892.	1892	1894
Costner, T. F., Charlotte Jeff. Med. Coll., 1882.	....	1892
Davidson, J. E. S., Charlotte Univ. of Md., 1894.	1898	1898

Members and Address.	*Licensed.*	*Joined State Society.*
Currie, E. W., Charlotte N. C. Med. Coll., 1907.	1907	1908
Clifford, J. S., Charlotte Geo. Wash. Univ., Wash., D. C., 1906.	1907	1908
DeArmond, J. M., Mint Hill Univ. Md., 1886.	1886	1887
Faison, I. W., Charlotte Bellevue Med. Coll., 1878.	1878	1878
Gibbon, R. L., Charlotte Jeff. Med. Coll., 1892.	1891	1893
Gibbon, J. H., Philadelphia Jeff. Med. Coll., 1892.	1891	1893
Graham, W. A., Charlotte P. & S., N. Y., 1888.	1889	1890
Hawley, F. O., Charlotte Univ. Edinburg, Scot., 1868.	....	1904
Henderson, S. M., Charlotte Univ. Md., 1894.	1894	1904
Hovis, L., Charlotte N. C. Med. Coll., 1904.	1904	1906
Hunter, L. W., Charlotte Bellevue Med. Coll., 1875.	1880	1880
Irwin, J. R., Charlotte Univ. of Md., 1879.	1882	1882
Keerans, L. C., Charlotte Univ. Md., 1902.	1906	1906
Knox, Jno., Randalburg	....	1904
King, P. M., Charlotte Univ. and Bellevue, N. Y., 1902.	1902	1904
Long, V. M., Newells N. C. Med. Coll., 1906.	1906	1908
McLaughlin, C. S., Charlotte Univ., 1896.	1903	1903
Montgomery, J. C., Charlotte Univ. N. Y., 1891.	1891	1891
Munroe, J. P., Charlotte Univ. Va., 1885.	1886	1890
Moore, B. S., Charlotte Univ. Va., 1905.	1905	1905
Nisbet, W. O., Charlotte Med. Coll. S. C., 1889.	1889	1899
Pharr, W. W., Charlotte P. & S., Balto., 1881.	1885	1885
Pressly, G. W., Charlotte Jeff. Med. Coll., 1892.	1895	1896
Peeler, C. N., Charlotte N. C. Med. Coll., 1906.	1906	1907
Reid, W. R., Pineville Univ. of N. Y., 1891.	1891	1896

Members and Address.	*Licensed.*	*Joined State Society.*
Russell, E. R., Charlotte Univ. Md., 1895.	1895	1898
Register, E. C., Charlotte Univ. N. Y., 1885.	1885	1887
Simmonds, J. O., Charlotte Grant Univ., 1904.	1906	1906
Walker, E. C., Charlotte Univ. Md., 1891.	1891	1894
Wakefield, W. H., Charlotte Hosp. Coll. Med., Ky., 1890.	1891	1893
Winchester, F. M., Charlotte Jeff. Med. Coll., 1883.	1887	1904
Whistnant, A. M., Charlotte P. & S., Balto., 1893.	1893	1894
Witherbee, W. D., Charlotte McGill Univ., 1899.	1905	1905
Allen, Wm., Charlotte Coll. P. & S. Balto., 1906.	1906	1908
Wooten, W. H., Davidson N. C. Med. Coll., 1894.	1894	1908
Wakefield, H. W., Charlotte N. C. Med. Coll., 1908.	1908	1908

MITCHELL COUNTY SOCIETY.

President, V. R. Butt, Bakersville Jeff. Med. Coll., 1871.	....	1907
Secretary, Chas. G. Bryant, Spruce Pine Louisv. Med. Coll., 1894.	1902	1907
Peterson, C. A., Spruce Pine N. C. Med. Coll., 1907.	1907	1908
Slagel, F. P., Bakersville	....	1908
Sloop, E. H., Plum Tree N. C. Med. Coll., 1905.	1905	1907

MOORE-LEE COUNTY SOCIETY.

President, John P. Monroe, Sanford P. & S., Balto., 1901.	1901	1903
Secretary, Gilbert McLeod, Carthage Univ. Md., 1882.	1885	1904
Blair, A. McNeill, Southern Pines Niagara Univ., 1897.	1904	1906
Caviness, A. H., High Falls Univ. Balto., 1901.	....	1903
Gladmon, Edwin, Southern Pines Nat. Univ., Wash., 1890.	1899	1902
Gilmore, W. D., Sanford Univ. N. C., 1903.	1903	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Hoyle, H. B., Jonesboro N. C. Med. Coll., 1896.	1896	1904
Laster, P. D., Moncure Louis. Md. Coll., 1875.	....	1906
McDonald, A. A., Jackson Springs N. C. Med. Coll., 1905.	1907	1908
McIver, Lynn, Sanford Univ. Ky., 1901.	1902	1903
McLeod, A. H., Aberdeen Balto. Med. Coll., 1896.	1896	1904
Matthews, J. H., Carthage N. C. Med. Coll., 1907.	1907	1908
Matthews, M. L., Cameron N. C. Med. Coll., 1903.	1903	1904
Monroe, W. A., Sanford Univ. Md., 1886.	1886	1888
Mudgett, W. C., Southern Pines Md. Med. Coll., 1903.	1908	1908
Palmer, Robt. W., Gulf Louisv. Med. Coll., 1890.	1891	1891
Sheppard, J. L., Sanford, R. F. D.	....	....
Shields, H. B., Carthage Atlanta Med. Coll., 1887.	1887	1904
Snipes, E. P., Jonesboro Vanderbilt Univ., 1890.	1890	1890
Street, M. E., Glendon P. & S., Balto., 1890.	1883	1902
Swett, Wm. P., Southern Pines Univ. Vt., 1896.	1901	1901
Watson, Leon, Broadway N. C. Med. Coll., 1900.	1900	1904
Willcox, J. W., Carthage Univ. N. C., 1906.	1906	1906

MONTGOMERY COUNTY SOCIETY.

President, A. F. Thompson, Troy Med. Coll., Ind., 1895.	1895	1904
Secretary, C. Daligny, Troy Military Med. S., Paris, 1878.	....	1906
Bowman, H. E., Biscoe N. C., 1904.	1905	1906
Gilmore, W. D., Mt. Gilead Univ. of N. C., 1903.	1903	1908
Grantham, W. L., Mt. Gilead N. C. Med. Coll., 1906.	1906	1908
Ingram, C. B., Mt. Gilead Jeff. Med. Coll., Pa., 1886.	1886	1902

Members and Address.	*Licensed.*	*Joined State Society.*
Shamberger, J. B., Star..... Univ. of Md., 1890.	1890	1892
Asbury, F. E., Asbury..... S. C. Coll. Med., 1876.	....	1896

McDOWELL COUNTY SOCIETY.

President, B. A. Cheek, Marion..... Univ. Pa., 1860.	....	1904
Secretary, D. M. McIntosh, Old Fort..... Med. Coll. Va., 1904.	1907	1908
Justice, M. L., Marion..... Nongrad. N. C. Med. Coll.	1897	1904
Morphew, M. F., Marion..... P. & S., Balto., 1883.	....	1893
Justice, G. B., Marion..... P. & S., Atlanta, 1907.	1907	1908
Kirby, G. S., Marion..... Univ. Coll. Med., Va., 1897.	1897	1903
Gilbert, W. W., Dysartsville.....	....	1904
Chaney, T. M., Old Fort..... Md. Univ., 1906.	1908	1908
Ashworth, B. L., Marion..... P. & S., Balto., 1892.	1893	1895

NASH COUNTY SOCIETY.

President, Jas. P. Battle, Nashville..... Univ. Md., 1888.	1889	1904
Secretary, J. P. Whitehead, Rocky Mount..... Univ. Md., 1899.	1899	1899
Brantley, C. H., Finch..... P. & S., Balto., 1887.	1894	1904
Brantley, Hassell, Spring Hope..... Univ. Md., 1888.	1888	1901
Covington, L. C., Rocky Mount..... Univ. Coll. Med., Va., 1901.	1902	1902
Dew, S. P., Spring Hope..... Univ. Md., 1885.	1885	1906
Marriott, H. B., Battleboro..... Univ. Md., 1883.	1883	1904
Matthews, T. A., Castalia..... Univ. Md., 1891.	1891	1895
Miller, Robt. B., Rocky Mount..... Med. Coll. Va., 1898.	1900	1902
Phillips, Jas. B., Jr., Selma..... Univ. Md., 1903.	1904	1904
Speight, R. H., Jr., Rocky Mount..... Univ. Md., 1901.	1901	1901

Members and Address.	*Licensed.*	*Joined State Society.*
Strickland, J. T., Nashville..... Univ. Md., 1890.	1890	1904
Whitehead, W. H., Rocky Mount..... Univ. Md., 1870.	1875	1875
Whittaker, W. H., Hilliardston..... Miss. Med., 1883.	1883	1905

NEW HANOVER COUNTY SOCIETY.

President, E. J. Wood, Wilmington..... Univ. Pa., 1902.	1903	1903
Secretary, T. M. Green, Wilmington..... Univ. Md., 1901.	1901	1904
Nesbit, Chas. T., Wilmington..... Balto. Med. Coll., 1903.	1907	1908
Harper, Chas. T., Wilmington..... Univ. Md., 1904.	1893	1904
Hall, Wright, Wilmington..... Non-grad. P. & S., Balto.	....	1904
Bullock, D. W., Wilmington..... Univ. Med., 1873.	1875	1875
Wessell, J. C., Wilmington..... Univ. Med., 1900.	1900	1900
Borneman, J. H., Wilmington..... Jeff. Med. Coll., 1903.	1904	1908.
Schonwald, J. T., Wilmington..... Long Island Med., 1879.	1880	1904
Bellamy, R. H., Wilmington..... Jeff. Med. Coll., 1902.	1902	1902
Harnett, Harry, Wilmington..... P. & S., N. Y., 1900.	1901	1904
Akerman, J., Wilmington ..... Johns Hopkins, 1905.	1905	1906
Cranmer, J. B., Wilmington..... Univ. N. C., 1905.	1905	1906
Caldwell, M. M., Wilmington..... Jeff Med. Coll., 1901.	1906	1907
MacMillan, W. D., Wilmington..... Univ. Md., 1868.	....	1904
Murphy, J. G., Wilmington..... Univ. of Louisville, 1903.	1903	1905
Harris, A. H., Wilmington..... Medico Chi. Coll., Pa., 1893.	1892	1904
Slocum, R. B., Wilmington..... Johns Hopkins, 1905.	1907	1908
McDonald, A. D. (honorary)..... Wash. Univ. of Med., 1877.	1877	1877
Thomas, P. J., Wilmington..... Univ. Md., 1902.	1902	1902

Members and Address.	*Licensed.*	*Joined State Society.*
Thomas, Geo. G., Wilmington..... Univ. Md., 1871.	1871	1871
Bell, C. D., Wilmington..... Univ. Md., 1883.	....	1904
Russell, F. H., Wilmington..... Univ. Md., 1893.	1893	1895
Love, W. J. (honorary member)..... S. C. Med. Coll., 1861.	1861	1870
Bellamy, W. J. H., Wilmington..... Univ. N. Y., 1868.	....	1870
NORTHAMPTON COUNTY SOCIETY.		
President, A. J. Ellis, Garysburg..... Univ. of Pa., 1858.	....	1904
Secretary, R. P. Morehead, Lasker..... P. & S. Balto., 1895.	1895	1900
Mahlon, Balton, Rich Square..... Jeff. Med. Coll., 1885.	1885	1885
Joyner, R. H., Woodland.....	....	1904
Lewis, H. W., Jackson..... Univ. of N. Y., 1877.	....	1887
Stancell, R. H., Margarettsville..... Med. Coll. Va., 1865.	....	1887
Cook, Q. H., Woodland..... Univ. of N. C., 1905.	1905	1906
Reed, D .H., Conway..... Columbian Univ., 1901.	1904	1906
Joyner, T. O., Severn..... Univ. Coll. Med., 1899.	1899	1904
ORANGE COUNTY SOCIETY.		
President, I. H. Manning, Chapel Hill..... Long Island Med. Coll., 1887.	1899	1901
Secretary, C. D. Jones, Hillsboro..... Vanderbilt Univ., 1887.	1891	1901
Abernathy, E. A., Chapel Hill..... Univ. Coll. Med., Va., 1901.	1901	1905
Hester, J. R., Prospect Hill..... Univ. Tenn.	....	1894
Hughes, C. M., Cedar Grove..... Atlanta Med. Coll., 1897.	1901	1904
Mangum, C. S., Chapel Hill..... Jeff. Med. Coll., 1894.	1896	1898
Murphy, W. E., Carr..... Louisv. Med. Coll., 1876.	....	1904
MacNider, Wm. DeB., Chapel Hill..... Univ. of N. C., 1903.	1903	1903
Whitehead, R. H., Charlottesville, Va..... Univ. Va., 1888.	1889	1891

Members and Address.	*Licensed.*	*Joined State Society.*
ONSLOW COUNTY SOCIETY.		
President, E. L. Cox, Jacksonville..... Univ. Med., 1889.	1889	1892
Secretary, C. Thompson, Jacksonville..... Tulane Univ., 1878.	....	1904
Sutton, C. W., Richlands..... Tulane Univ., 1905.	1905	1906
Nicholson, J. L., Richlands..... Univ. N. Y., 1875.	1880	1880
PAMLICO COUNTY SOCIETY.		
President, G. S. Atmore, Sonewall..... Wash. Univ., 1870.	1870	1904
Secretary, C. A. Flowers, Bayboro..... P. & S., Balto., 1905.	1907	1908
Daniels, O. C., Oriental..... Med. Coll. Va., 1903.	1903	1904
Dees, D. A., Bayboro..... Balto. Med. Coll., 1903.	1903	1905
PENDER COUNTY SOCIETY.		
President, W. H. Crowell, Burgaw..... Univ. Md., 1895.	1895	1896
Secretary, R. H. Bradford, Burgaw..... N. C. Med. Coll., 1904.	1904	1905
Alexander, L. L., Topsail Sound..... Univ. N. Y., 1869.	....	1904
Lucas, Geo. F., Currie..... Univ. N. Y., 1870.	....	1904
Williams, R. J., Rocky Point..... Jeff. Med. Coll., 1893.	1893	1904
PERSON COUNTY SOCIETY.		
President, C. G. Nichols, Roxboro..... Non-grad. Bellevue.	1885	1891
Secretary, W. A. Bradsher, Roxboro..... Univ. Md., 1904.	1904	1905
Baynes, R. S., Hurdle Mills, R. F. D. No. 2..... P. & S., Balto., 1881.	1881	1904
Long, W. T., Roxboro..... Balto. Med. Coll., 1905.	1905	1907
Love, B. E., Roxboro..... Univ. Md., 1904.	1904	1905
Merritt, J. H., Woodsdale, R. F. D., No. 2..... Univ. N. C., 1906.	1907	1908
Schaub, O. P., Roxboro..... Balto. Med. Coll., 1898.	1898	1898
Swann, J. F., Semora..... P. & S., Balto., 1898.	1898	1904

Members and Address.	*Licensed.*	*Joined State Society.*
PASQUOTANK-CAMDEN-DARE COUNTY SOCIETY.		
President, John B. Griggs, Elizabeth City..... Univ. Md., 1892.	1892	1904
Secretary, Zenos Fearing, Elizabeth City..... Univ. Med. Coll., Va.	1901	1904
Lumsden, W. J., Elizabeth City..... Univ. Md., 1869.	....	1888
McMullan, O., Elizabeth City..... Univ. Va., 1880.	....	1889
Wood, J. E., Elizabeth City..... Wash. Univ., Md., 1869.	....	1904
Sawyer, C. W., Elizabeth City..... Univ. Md., 1886.	....	1904
Fearing, I., Elizabeth City..... P. & S., Balto., 1896.	1896	1904
Aydlette, H. T., Elizabeth City..... Univ. Va., 1894.	1895	1896
Williams, C. B., Elizabeth City..... Univ. Coll. Med., Va., 1903.	1903	1906
Walker, H. D., Elizabeth City..... Univ. Md., 1902.	1902	1902
Ferebee, C. G., Shiloh..... Med. Coll. Va., 1903.	1904	1904
Fearing, W. B., Manteo..... Univ. Md., 1881.	....	1904
Davis, J. J., Buxton..... Univ. Md., 1891.	1891	1905
Sawyer, W. W., Shiloh..... Univ. Md., 1903.	1903	1905
Lister, J. L., South Mills..... Med. Coll. of Va., 1896.	1896	1907
PERQUIMANS COUNTY SOCIETY.		
President, Wm. Riddick, Hertford..... Univ. Pa., 1854.	....	1904
Secretary, R. W. Smith, Hertford..... Univ. Md., 1902.	1892	1904
White, Thos. N,, Belvidere..... P. & S., Balto.	1875	1905
McMullan, Thomas S., Hertford..... Univ. Va., 1888.	1889	1892
PITT COUNTY SOCIETY.		
President, W. C. Whitfield, Grifton..... Univ. Md., 1884.	1884	1884

Members and Address.	*Licensed.*	*Joined State Society.*
Secretary, J. E. Nobles, Greenville.... Jeff. Med. Coll., 1899.	1899	1902
Hudson, J. H., Greenville, R. F. D.... Balto. Med. Coll., 1907.	1907	1908
Frizzelle, M. T., Ayden.... Univ. Coll. Med., 1907.	1907	1908
Patrick, J. E., Farmville.... Univ. Coll. Med., 1900.	1900	1900
Moye, E. A., Greenville.... Jeff. Med. Coll., 1895.	1895	1897
Joyner, C. C., Farmville.... Jeff. Med. Coll., 1899.	1899	1904
Basnight, T. G., Stokes.... Univ. Md., 1904.	1905	1906
Brown, Zeno, Greenville.... Bellevue Med. Coll., 1883.	1885	1885
Cox, B. T., Winterville.... Univ. Md., 1888.	1888	1888
Dawson, W. W., Grifton.... Univ. Md., 1897.	1897	1900
Dixon, Jos., Ayden .... Med. Coll. Va., 1894.	1893	1895
Fountain, Wm., Greenville .... Univ. Coll. Med., Va., 1898.	1899	1899
Grimes, R. J., Bethel.... Univ. Pa., 1876.	1876	1904
James, F. C., Bethel.... Columbian Univ., D. C., 1859.	....	1894
Jones, C. M., Grimesland.... Univ. Md., 1892.	1892	1895
Laughinghouse, Chas. O'H., Greenville.... Univ. Pa., 1893.	1893	1894
Morrill, D. S., Farmville.... Balto. Med. Coll., 1897.	1897	1904
Morrill, Jenness, Falkland .... Univ. Md., 1888.	1888	1904
Ricks, L. E., Shelmerdine.... Med. Coll. Va., 1896.	1896	1898
Skinner, L. C., Ayden.... Univ. Md., 1901.	1901	1902
Thigpen, G. F., Bethel.... Univ. Md., 1903.	1903	1904

RANDOLPH COUNTY SOCIETY.

President, S. A. Henley, Asheboro.... Attended Jeff. Med. Coll. 1861.	....	1888
Secretary, C. C. Hubbard, Farmer.... Jeff. Med. Coll., 1888.	1890	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Sumner, W. I., Randleman..... Univ. Tenn., 1893.	1894	1894
Moore, W. J., Asheboro..... P. & S., Balto., 1892.	1893	1901
McFadyen, P. R., Randleman..... Med. Coll. of Va., 1901.	1901	1904
Fox, T. I., Franklinsville..... Vanderbilt, 1894.	1899	1904
Hunter, J. V., Asheboro..... Univ. Louisville, Ky., 1898.	1898	1904
Foust, D. Leroy, Liberty..... N. C. Med. Coll., 1905.	1905	1908
Welborn, W. R., Coleridge..... N. C. Med. Coll., 1905.	1908	1908

RICHMOND COUNTY SOCIETY.

President, A. C. Everett, Rockingham, R. F. D..... Univ. Md., 1897.	1897	1903
Secretary, J. I. Fowlkes, Hamlet..... Atlanta Coll. P. & S., 1903.	1903	1903
Kinsman, H. F., Hamlet..... Univ. Vt., 1894.	1897	1904
Ledbetter, J. M., Rockingham..... Vanderbilt, 1894.	1894	1903
Garrett, F. J., Rockingham..... Univ. Md., 1889.	1897	1904
Hunter, N. C., Rockingham..... Medico-Chir., Phila., 1899.	1899	1904
McPhail, L. D., Rockingham..... Univ. Md., 1900.	1900	1902
Steele, W. H., Rockingham..... Bellevue Med. Coll., 1874.	1874	1904
Webb, W. P., Rockingham..... Med. Coll. S. C., 1897.	1897	1904
Williamson, J. H., Rockingham, R. F. D..... Bellevue Med. Coll., 1859.	....	1904

ROBESON COUNTY SOCIETY.

President, B. F. McMillan, Red Springs..... Univ. Md., 1882.	1884	1884
Secretary, A. B. Croom, Maxton..... Univ. Md., 1905.	1905	1906
Brown, J. P., Fairmont..... Univ. Md., 1883.	....	1904
Croom, J. D., Maxton..... Med. Coll of S. C., 1876.	....	1887
Currie, D. S., Parkton..... N. C. Med. Coll., 1906.	1906	1906

Members and Address.	*Licensed.*	*Joined State Society.*
Dickson, A. P., Raeford Univ. N. Y., 1878.	....	1906
Evans, W. E., Rowland Med. Coll. Va., 1894.	1894	1904
Gibson, M. R., Maxton Univ. Md., 1905.	1905	1908
Hodgin, H. H., Red Springs N. C. Med. Coll., 1906.	1906	1906
Kirkpatrick, L. R., Maxton N. C. Med. Coll., 1902.	1902	1902
Knox, John, Jr., Lumberton Univ. Md., 1906.	1907	1907
McKenzie, J. C., Orrum	....	1907
McKinnon,, W. H., Red Springs Bellevue Med. Coll., 1870.	....	1905
McMillan, J. L., Red Springs Univ. Md., 1881.	1881	1902
McNatt, H. W., Maxton Univ. Md., 1881.	....	1905
McPhaul, W. A., Lumberton Univ. Nashville, 1905.	1905	1906
Norment, R. M., Lumberton Univ. Md., 1893.	1893	1904
Norment, T. A., Lumberton N. C. Med. Coll. 1894.	1893	1908
Northrup, T. L., St. Paul's Univ. Md., 1897.	1897	1903
Pate, G. M., Rowland Med. Coll. S. C., 1900.	1900	1905
Pope, H. T., Lumberton N. C. Med. Coll., 1894.	1893	1902
Reedy, Howard, Rowland Med. Coll. S. C., 1884.	....	1904
Rozier, B. S., Lumberton Med. Coll. Va., 1855.	....	1904
Rozier, R. G., Lumberton Univ. Md., 1899.	1899	1904
Stamps, Thomas, Lumber Bridge Univ. Louisville, 1888.	1888	1888
Stevens, W. F., Fairmont Tenn. Med. Coll., 1901.	1898	1904
Thompson, N. A., Lumberton Md. Med. Coll., 1895.	1895	1904
Kitchin, Thurman D., Lumberton Md. Med. Coll., 1908.	1908	1908
McMurray, H. E., Fairmont Md. Med. Coll., 1902.	1908	1908

Members and Address.	*Licensed.*	*Joined State Society.*
ROCKINGHAM COUNTY SOCIETY.		
President, John Sweeney, Leaksville..... P. & S., Balto., 1886.	....	1904
Secretary, J. W. McGehee, Reidsville..... Univ. Md., 1904.	1904	1905
Mills, J. C., Reidsville..... Univ. Penn., 1869.	....	1907
Ray, J. B., Leaksville..... B. M. C., 1890.	1890	1904
Tuttle, A. F., Leaksville..... N. C. Med. Coll., 1901.	1901	1906
Wharton, C. R., Ruffin..... Med. Coll. Va., 1897.	1897	1904
ROWAN COUNTY SOCIETY.		
President, Henry L. Monk, Spencer..... Med. Coll. Va., 1897.	1899	1903
Secretary, Julius A. Caldwell, Salisbury..... Johns Hopkins, 1904.	1905	1905
Atkins, Geo. J., China Grove..... P. & S., Balto., 1894.	1894	1905
Cowan, Robt. Locke, Salisbury.....	....	....
Gaither, John Burgess, China Grove..... P. & S., Balto., 1869.	....	1904
Ramseur, Geo. Alex, China Grove..... Jeff. Med. Coll., 1880.	....	1898
Summerell, Mitchell E., China Grove, R. F. D..... Univ. Pa., 1883.	1883	1883
Chenault, Wm. F., Cleveland..... Univ. Md., 1888.	1888	1891
Poole, Chalmers M., Craven..... P. & S., Balto., 1880.	1880	1880
Goodman, A. B., Crescent..... N. C. Med. Coll., 1898.	1897	1904
Withers, Banks, Enochsville..... P. & S., N. Y., 1905.	....	1906
Fitzgerald, J. Y., Gold Hill..... Jeff. Med. Coll., 1889.	1889	1906
Peeler, John H., Granite Quarry..... Univ. Coll. Med., Va., 1899.	1899	1904
Brown, Geo. A., Mt. Ulla..... Univ. Coll. Med., Va., 1897.	1897	1898
Brawley, Robt. V., Salisbury..... Univ. Coll. Med., Va., 1900.	1900	1904
Councill, Jeff B., Salisbury..... P. & S., Balto., 1885.	1885	1904
Crump, Wm. L., Salisbury..... Jeff. Med. Coll., 1879.	1881	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Dorsett, E. Rose, Salisbury Jeff. Med. Coll., 1869.	....	1904
Foust, Isaac H., Salisbury Vanderbilt Univ., 1899.	1898	1904
Heilig, Vernon G., Salisbury Univ. Md., 1899.	1899	1904
McKenzie, Wm. W., Salisbury Jeff. Med. Coll., 1893.	1893	1894
Sawyer, Chas. J., Salisbury P. & S., Balto., 1895.	1895	1897
Stokes, J. Ernest, Salisbury Univ. Md., 1892.	1900	1901
Trantham, Henry T., Salisbury Univ. N. Y., 1875.	1878	1879
West, Robt. M., Salisbury Med. Coll. Va., 1900.	1900	1904
Whitehead. John, Salisbury Univ. Pa., 1880.	1880	1880
Busby, Julian G., Spencer Univ. Md., 1904.	1904	1905
Smoot, Marvin L., Spencer Univ. Coll. Med., Va., 1903.	1903	1904
Young, Jas. W., Spencer Univ. Md., 1898.	1898	1908
Holshauser, A. L., Rockwell	....	....
Bowers, A. H., Gold Hill Univ. Coll. Med., 1906.	....	....
Woodson, C. W., Salisbury Coll. P. & S., N. Y., Columbia Univ., 1904.	1905	1907
Flippin, J. M., Salisbury P. & S., Balto., 1884.	....	1893

RUTHERFORD COUNTY SOCIETY.

President, Oliver Hicks, Caroleen Med. Coll. Pa.	....	1904
Secretary, E. B. Harris, Rutherfordton P. & S., Balto.	....	1904
Andrews, R. M., Cliffdale Mem. Hosp. Coll., 1904.	1904	1905
Biggs, H. M., Rutherfordton Univ. of Pa., 1897.	1907	1908
Chapman, G. M., Logan's Store Grant Univ., 1904.	1904	1905
Bostic, W. C., Forest City N. C. Med. Coll., 1905.	1905	1906
Hamrick, T. G., Caroleen P. & S., Balto., 1895.	1895	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Hicks, Romeo, Henrietta So. Med. Coll., Ga., 1888.	....	1899
Harrill, L. B., Caroleen Grant Univ., Tenn.	....	1904
Lovelace, T. B., Henrietta P. & S., Balto., 1883.	....	1904
Reid, G. P., Forest City Univ. Coll. Med., Va., 1895.	1894	1899
Twitty, T. B., Rutherfordton Univ. N. Y., 1863, 1 year.	....	1904
Twitty, J. C., Rutherfordton Balto. Med., 1892.	1892	1906
Thompson, J. B., Cliffdale P. & S. Balto., 1898.	1898	1904
Thompson, W. A., Rutherfordton P. & S., Balto.	....	1904
Wiseman, C. B., Henrietta P. & S., Balto., 1902.	1902	1902
Young, G. E., Forest City Non-grad. Univ. Penn., 1859.	1885	1904
Haynes, B. M., Cliffside N. C. Med. Coll., 1905.	1905	1906
Norris, Henry, Rutherfordton Univ. Pa., 1906.	1906	1908

SAMPSON COUNTY SOCIETY.

President, F. H. Holmes, Clinton Univ. Md., 1895.	1895	1896
Secretary, G. M. Cooper, Clinton Univ. Coll. Med., Va., 1905.	1905	1906
Stevens, J. A., Clinton Jeff. Med. Coll., 1883.	1883	1883
Hiatt, H. B., Clinton Univ. Md., 1907.	1907	1908
Lee, A. M., Clinton Med. Coll. Va., 1862.	....	1904
Matthews, J. O., Clinton, R. F. D. Univ. Coll. Med., Va., 1897.	1897	1902
Kerr, C. S., Kerr's Univ. Md., 1869.	....	1904
Taylor, W. I., Kerr's, R. F. D. N. C. Med. Coll., 1902.	1904	1905
Sloan, Henry, Ingold S. C. Med. Coll., 1881.	1885	1902
Crumpler, Paul, Roseboro Univ. Tenn., 1907.	1907	1908
Sikes, G. L., Salemburg Univ. Coll. Med., Va., 1900.	1900	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Wilson, R. B., Newton Grove Ky. Sch. Med., 1889.	1890	1904
McLean, R. H., Dunn, R. F. D. No. 6 P. & S., Balto., 1882.	....	1907

SCOTLAND COUNTY SOCIETY.

President, W. T. Pate, Gibson P. & S., Balto., 1885.	1885	1885
Secretary, A. W. Hamer, Laurinburg S. C. Med. Coll., 1858.	1886	1904
Prince, D. M., Laurinburg S. C. Med. Coll., 1875.	1878	1879
Blue, K. A., Laurinburg Univ. Md., 1889.	1890	1892
Shaw, W. G., Fontcol P. & S., Balto., 1892.	1895	1904
John, Peter, Laurinburg Univ. Md., 1897.	1897	1904
Everington, G. D., Laurinburg N. C. Med. Coll., 1899.	1898	1898
McLean, N. M., Gibson Univ. Md., 1883.	1883	1888
Gibson, J. S., Gibson Univ. Md., 1906.	1906	1906
McLean, Peter, Laurinburg Univ. Md., 1907.	1907	1908
Jones, Wm. D., Laurinburg Univ. Md., 1908.	1908	1908

STANLY COUNTY SOCIETY.

President, O. D. King, Albemarle Long I. Hosp. Med. Coll., 1884.	....	1884
Secretary, W. I. Hill, Albemarle Univ. Md., 1897.	1897	1904
Anderson, J. N., Albemarle Univ. Md., 1895.	1895	1904
Whitley, V. A., Albemarle Univ. Md., 1884.	1884	1904
Hartsell, F. E., Big Lick Balto. Med. Coll., 1895.	1895	1905
Hathcock, T. A., Norwood Univ. Md., 1893.	1893	1904
Allen, J. A., New London Univ. Coll. Med., 1901.	1901	1906
Whitley, D. P., Millingport Univ. Md., 1889.	1890	1898
Campbell, J. I., Whitney Undergraduate N. C. Med. Coll.	1898	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Hall, J. Clegg, Albemarle Univ. Coll. Med., 1899.	1899	1904
Cox, B. F., Palmerville Coll. P. & S., Balto., 1886.	1886	1907

STOKES COUNTY SOCIETY.

President, L. H. Hill, Germanton Jeff. Med. Coll., 1877.	1877	1877
Secretary, E. Fulp, Fulp Univ. N. Y., 1882.	....	1896
Phillips, M. D., Dalton Univ. N. Y., 1881.	1881	1904
Moore, W. B., Smith P. & S., Balto., 1893.	1893	1904
Moir, S. A., Francisco P. & S., Balto., 1888.	....	1904
Leak, J. J., Dan River Univ. Coll. Med. Va., 1901.	....	1904
Smith, J. T., Westfield Jeff. Med. Coll., 1899.	1899	1904
Neal, J. W., Meadows P. & S., Balto., 1889.	....	1904
Jones, A. J., Walnut Cove Univ. N. Y., 1868.	1894	1904

SURRY COUNTY SOCIETY.

President, J. B. Smith, Pilot Mountain P. & S., Balto., 1885.	....	1896
Secretary, E. M. Hollingsworth, Mt. Airy P. & S., Balto., 1886.	1886	1904
Allred, E. W., Mt. Airy Jeff. Med. Coll., 1877.	....	1904
Ashby, T. B., Mt. Airy P. & S., Balto., 1885.	1885	1896
Hollingsworth, J. M., Mt. Airy P. & S., Balto., 1886.	1886	1904
Hollingsworth, R. E., Mt. Airy Univ. Coll. Va., 1898.	1899	1904
Taylor, W. S., Mt. Airy Jeff. Med. Coll., 1874.	....	1894
Mebane, W. C., Mt. Airy N. C. Med., 1905.	1905	1908
Flippin, R. E. L., Pilot Mountain Balto. Med. Coll., 1897.	1897	1901
Woltz, J. L., Pilot Mountain So. Med. Coll., Ga., 1897.	1902	1904
Flippin, S. T., Siloam N. C. Med. Coll., 1898.	1898	1898

Members and Address.	*Licensed.*	*Joined State Society.*
Ring, J. W., Elkin P. & S., Balto., 1880.	....	1904
Reece, J. M., Elkin P. & S., Balto., 1886.	....	1904
Woltz, J. R., Dobson	....	1904
Stone, Wm. M., Dobson N. C. Med. Coll., 1906.	1906	1907
Thompson, K., Kapp's Mill Jeff. Med. Coll., 1858.	....	1904
Lawrence, C. L., Mt. Airy Geo. Wash. Univ., 1908.	1908	1908

SWAIN COUNTY SOCIETY.

President, R. L. Davis, Bryson City So. Med. Coll., Ga., 1891.	....	1903
Secretary, A. M. Barnett, Bryson City Non-grad. Louisv. Med. Coll., 1884.	1885	1899
Bryson, D. R., Bryson City Univ. Md., 1900.	1900	1904
League, J. H., Whittier Nongrad. Jeff. Med. Coll., 1881.	1885	1904
Cooper, J. A., Almond	....	1904
Holt, R. D., Cherokee Med. Coll. Va., 1899.	1899	1904

TRANSYLVANIA COUNTY SOCIETY.

President, E. S. English, Brevard Univ. of South, 1901.	1902	1904
Secretary, Goode Cheatham, Brevard N. C. Med. Coll., 1895.	1895	1896
Wallis, W. J., Brevard P. & S., Balto., 1892.	1897	1904
Lyday, W. M., Penrose P. & S., Balto., Md., 1891.	....	1904
Hunt, C. W., Brevard P. & S., Balto., 1880.	1881	1904
Lyday, A. E., Penrose Tenn. Med. Coll.	....	1904
King, M. M., Brevard Eclectic Med. Coll., Ga., 1880.	....	1904

UNION COUNTY SOCIETY.

President, H. C. Housten, Waxhaw Univ. Nashville, 1899.	1899	1903
Secretary, John W. Neal, Monroe Univ. N. Y., 1884.	1887	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Armfield, R., Marshville.... Med. Coll. Va., 1881.	....	1904
Blair, J. M., Monroe.... Louisv. Med. Coll., 1887.	....	1898
Dees, W. A., Marshville.... Univ. Ga., 1891.	1893	1904
Eubanks, J. B., Monroe, R. F. D.... Vanderbilt Univ., 1887.	....	1904
Nance, G. B., Monroe.... Jeff. Med. Coll., 1885.	1885	1904
Price, W. H., Matthews....	....	1904
Stevens, S. A., Monroe.... Univ. Md., 1900.	1898	1904
Stewart, H. D., Monroe.... Univ. Md., 1898.	1898	1904
Whitley, A. D. N., Unionville.... Nongrad. Univ. Md.	1897	1904
McCain, W. R., Waxhaw.... Univ. Md., 1897.	1898	1906
Ashcraft, J. E., Monroe.... Univ. N. Y., 1887.	1887	1888
Blair, M. P., Marshville.... Med. Coll. Va., 1895.	....	1904
Perkins, D. R., Marshville.... Balto. Med. Coll., 1903.	1906	1906
Jerome, J. R., Wingate.... Univ. Md., 1890.	....	1904

VANCE COUNTY SOCIETY.

President, H. H. Bass, Henderson.... Univ. Coll. Med., Va., 1899.	1899	1900
Secretary, Edwin F. Fenner, Henderson.... Univ. Md., 1905.	1906	1907
Tucker, John Hill, Henderson.... Univ. Va., 1899.	1899	1904
Harris, F. R., Henderson.... Univ. Va., 1881.	1882	1883
Pendleton, A. S., Henderson.... Univ. Pa., 1895.	1898	1899
Gill, R. J., Henderson.... Univ. Pa., 1867.	1868	1883
McAllister, Wm., Middleburg.... P. & S., Balto., 1890.	1890	1904
Alston, B. P., Epsom.... Univ. Md., 1868.	....	1868
Carstarphen, W. T., Kittrell.... Jeff. Med. Coll., 1906.	1906	1908

Members and Address.	*Licensed.*	*Joined State Society.*
WAKE COUNTY SOCIETY.		
President, W. I. Royster, Raleigh Bellevue Med. Coll., 1869.	1869	1871
Secretary, W. C. Horton, Raleigh P. & S., Balto., 1897.	1896	1904
Abernethy, C. O., Raleigh Univ. N. C., 1906.	1906	1906
Anderson, Albert, Raleigh Univ. Va., 1888.	1888	1889
Barefoot, J. J., Raleigh Univ. N. C., 1907.	1907	1908
Battle, K. P., Jr., Raleigh Univ. Va., 1881; Bellevue, 1882.	1882	1882
Bell, G. M., Wakefield P. & S., Balto., 1880.	....	1903
Blalock, N. M., Gulley's Mills P. & S., Balto., 1890.	1890	1904
Boone, W. H., Morrisville N. C. Med. Coll., 1902.	1902	1904
Buffalo, J. S., Garner Balto. Med. Coll., 1900.	1900	1904
Burt, B. W., Enno P. & S., Balto., 1886.	1886	1904
Caveness, Z. M., Zebulon Univ. N. C., 1903.	1903	1903
Cotton, A. T., Raleigh P. & S., Balto., 1879.	....	1885
Dixon-Carroll, E. Delia, Raleigh Woman's Med., N. Y., 1895.	1900	1900
Ferebee, E. B., Raleigh P. & S., Balto., 1885.	1885	1903
Fowler, M. L., Rolesville P. & S., Balto., 1881.	....	1904
Gaines, Lewis M., Wake Forest Johns Hopkins, 1903.	1906	1906
Goodwin, A. W., Raleigh Bellevue Med. Coll., 1887.	1887	1887
Harris, H. H., Wake Forest Univ. Pa., 1860.	1860	1886
Hayden, Catherine P., Raleigh Univ. Colo., 1894.	1902	1904
Haywood, F. J., Raleigh Bellevue Med. Coll., 1868.	....	1898
Haywood, Hubert, Raleigh Bellevue Med. Coll., 1879.	....	1904
Holding, S. P., Wake Forest Bellevue Med. Coll., 1897.	1897	1904
Jenkins, C. L., Raleigh Univ. N. Y., 1890.	1890	1892

Members and Address.	*Licensed.*	*Joined State Society.*
Johnson, R. W., Apex Univ. Tenn., 1900.	1901	1904
Jordan, T. M., Raleigh P. & S., Balto., 1881.	1881	1881
Judd, J. M., Cardenas Balto. Med. Coll., 1897.	1898	1901
Knox, A. W., Raleigh Bellevue Med. Coll., 1874.	1878	1880
Lewis, R. H., Raleigh Univ. Md., 1871.	1877	1877
Marshburn, B. D., Raleigh, R. F. D. No. 7 Nongrad. P. & S., Balto., 1875-6.	....	1904
Marshburn, H. H., Neuse, R. F. D. No. 2 P. & S., Balto., 1876.	....	1904
McCullers, J. J. L., McCullers P. & S., Balto., 1886.	1886	1904
McGeachy, R. S., Raleigh Bellevue Med. Coll., 1894.	1894	1895
McGee, J. W., Sr., Raleigh Univ. Pa., 1860.	1860	1865
McGee, J. W., Jr., Raleigh Bellevue Med. Coll., 1888.	1888	1888
McKee, James, Raleigh Bellevue Med. Coll., 1869.	1869	1870
Moncure, Wm., Raleigh Univ. Pa., 1904.	1905	1906
Penny, J. A. J., Vanteen Univ. N. Y., 1861.	....	1904
Powers, J. B., Wake Forest Long Island Med. Coll., 1878.	1885	1904
Ray, O. L., Bangor Univ. Coll. Med., Va., 1899.	1899	1904
Rankin, W. S., Wake Forest Univ. Md., 1901.	1901	1901
Rogers, Jas. R., Raleigh P. & S., Balto., 1886.	1886	1904
Royster, H. A., Raleigh Univ. Pa., 1894.	1894	1895
Sexton, J. A., Fuquay Springs Univ. Md., 1873.	1879	1904
Sorrell, L. P., Flint Med. Coll. Va., 1875.	....	1904
Stephens, Ralph S., Raleigh Univ. N. C., 1905	1905	1906
Thompson, S. W., Falls Med. Coll. Va., 1875.	....	1904
Tucker, H. McKee, Raleigh Univ. Md., 1899.	1899	1899

Members and Address.	*Licensed.*	*Joined State Society.*
Templeton, J. M., Cary Balto. Med. Coll., 1882.	1882	1904
Utley, B. S., Holly Springs P. & S., Balto., 1878.	....	1886
Whitaker, Joel, Raleigh Univ. Md., 1900.	1905	1907
Wilkerson, Chas. B., Apex Univ. N. C., 1906.	1906	1907
Young, L. B., Rolesville P. & S., Balto., 1886.	1886	1907

WATAUGA-MITCHELL COUNTY SOCIETY.

President, J. W. Jones, Boone U. S. Grant Univ., 1900.	1903	1904
Secretary, McD. Little, Horton	....	1904
Hodges, James M., Banner's Elk Balto. Med. Coll., 1904.	1906	1906
Farthing, Logan E., Boone Univ. N. C., 1906.	1906	1906

WARREN COUNTY SOCIETY.

President, P. J. Macon, Warrenton Univ. Md., 1883 .	1883	1901
Secretary, Chas. H. Peete, Warrenton Univ. Va., 1906.	1906	1906
Alston, Willis, Sr., Littleton Univ. Md., 1869.	1869	1870
Alston, Willis, Jr., Littleton Univ. Md., 1903.	1903	1903
Holt, T. J., Wise Med. Coll. Va., 1904.	1904	1904
Perkins, F. E., Manson, R. F. D. No. 1 Univ. Buffalo, N. Y., 1905.	1906	1906

WASHINGTON-TYRRELL COUNTY SOCIETY.

President, W. H. Hardison, Creswell Wash. Univ., Balto., Md., 1870.	1871	1904
Secretary, W. H. Ward, Plymouth Univ. Md., 1881.	1886	1900
Hallsey, B. F., Roper Vanderbilt Univ., Nashville, Tenn., 1893.	1894	1900
Disosway, A. W., Plymouth Univ. Md., Balto., 1905.	1905	1908
Hassell, Jas. L., Creswell Coll. P. & S., Balto., 1886.	1889	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Speight, J. W., Roper Ky. School of Med., 1885.	1885	1904
Cohn, B. W., South Mills, Camden County Med. Coll. Va., 1884.	1901	1904

WAYNE COUNTY SOCIETY.

President, W. W. Faison, Goldsboro Jeff. Med. Coll., 1878.	1883	1904
Secretary, R. E. Lee, Goldsboro Univ. Md., 1896.	1896	1900
Cobb, W. H. H., Sr., Goldsboro Jeff. Med. Coll., 1861.	1878	1878
Kennedy, J. B., Goldsboro, R. F. D. Univ. Nashville, 1870.	....	1904
Exum, Wyatt P., Goldsboro, R. F. D. Med. Coll. Va., 1901.	1902	1904
Sutton, W. G., Seven Springs Jeff. Med. Coll., 1889.	1889	1896
Roberts, J. D., Mt. Olive Jeff. Med. Coll., 1889.	1907	1904
Roberts, J. D., Mt. Olive Bellevue Med. Coll., 1875.	1907	1904
Kornegay, L. W., Mt. Olive N. C. Med. Coll., 1906.	1906	1906
Person, E. Cooper, Pikeville Med. Coll. Va., 1905.	1905	1908
Robinson, M. E., Goldsboro Wash. Univ., Balto., 1870.	....	1886
Parker, J. Rainey, Goldsboro Univ. Coll. Med., Rich., 1901.	1901	1903
Ginn, T. L. Goldsboro Med. Coll. Va., 1901.	1901	1904
Spicer, William Bellevue Med. Coll., 1898.	1897	1904

WILSON COUNTY SOCIETY.

President, B. S. Herring, Wilson Univ. Mich., 1901.	1901	1901
Secretary, A. F. Williams, Wilson Univ. Md., 1901.	1901	1905
Dickinson, E. T., Wilson Med. Coll. Va., 1895.	1895	1900
Moore, C. E., Wilson Bellevue Med. Coll., 1875.	1875	1875
Anderson, W. S., Wilson Washington Univ., 1867.	....	1899

Members and Address.	*Licensed.*	*Joined State Society.*
Anderson, W. H., Wilson Univ. Va., 1902.	1905	1905
Crocker, S. H., Stantonsburg Ky. School Med., 1894.	1899	1899
Lamm, I. W., Lucama Univ. Coll. Med., 1899.	1900	1900
Moore, E. G., Elm City Univ. Md., 1883.	1890	1890
Harrison, J. S., Elm City Med. Coll. Va., 1903.	1905	1908
Barnes, B. F., Elm City Univ. Md., 1902.	1902	1902
Best, Henry, Wilson Univ. N. C., 1907.	1907	1908

WILKES COUNTY SOCIETY.

President, J. M. Turner, Wilkesboro Univ. Louisv., Ky., 1881.	....	1904
Secretary, John Q. Myers, North Wilkesboro N. C. Med. Coll., 1904.	1904	1904
Gilreath, F. H., North Wilkesboro Univ. Nashville, 1898.	1898	1898
Horton, W. P., North Wilkesboro Balto. Med. Coll., 1892.	1896	1904
Duncan, J. E., North Wilkesboro Univ. Coll. Med., Rich., Va., 1907.	1907	1908
Somers, L. P., Osbornville	....	1904
Pegram, R. W. S., Dellaplane	....	....
White, J. W., Wilkesboro Jeff. Med. Coll., Phila., 1889.	1889	1890
Eller, A. J., Reedy Branch P. & S., Balto., 1893.	1895	1904

YADKIN COUNTY SOCIETY.

President, T. R. Harding, Yadkinville P. & S., Balto., 1885.	1885	1906
Secretary, M. A. Royall, Yadkinville P. & S., Balto., 1885.	....	1904
Shore, T. W., Boonville Univ. Richmond, 1898.	1899	1904
Fassett, B. W., Yadkinville Balto. Med., 1898.	1899	1904
Holcomb, C. M., Chestnut Ridge P. & S., Balto., 1869.	....	1905
Blackwell, T. L., Boonville Louisv. Med. Coll., 1874.	....	1905

Members and Address.	*Licensed.*	*Joined State Society.*
Clingman, J. J., Huntsville..... P. & S., Balto., 1877.	....	1904
Leak, W. G., East Bend..... N. C. Med., 1900.	1900	1904
Russell, S. L., Yadkinville..... Univ. Tenn., 1892.	1889	1904
Hutchens, E. M., Boonville..... N. C. Med. Coll.	1896	1904
Salmans, H. C., Jonesville..... N. C. Med. Coll., 1904.	1904	1908

YANCEY COUNTY SOCIETY.

President, J. L. Ray, Burnsville..... Coll. P. & S., Balto., 1887.	1887	1890
Edwards, C. P., Burnsville..... Tenn. Med. Coll., 1902.	1903	1903
Ewing, J. B., Boonford..... Independent Med. Coll.	1905	1907
Robertson, W. B., Burnsville..... Balto. Med., 1898.	1907	1908

Honorary Fellows, Medical Society of the State of North Carolina.

Name.	Address.
H. T. Bahnson	Winston-Salem.
W. W. Lane	Wilmington.
W. J. Love	Wilmington.
James McKee	Raleigh.
Willis Alston	Littleton.
W. J. H. Bellamy	Wilmington.
W. I. Royster	Raleigh.
George G. Thomas	Wilmington.
Francis Duffy	New Bern.
J. F. Shaffner	Salem.
B. P. Alston	Henderson.
W. J. Jones	Goldsboro.
F. J. Haywood	Raleigh.
P. A. Barrier	Mount Pleasant.
Geo. W. Long	Graham.
R H. Speight	Whitakers.
R. J. Noble	Selma.
W. H. Whitehead	Rocky Mount.
D. W. Bullock	Wilmington.
L. H. Hill	Germanton.
L J. Picot	Raleigh.
R. H. Lewis	Raleigh.
J. W. McGee	Raleigh.
Wm. H. H. Cobb	Goldsboro.
I. W. Faison	Charlotte.
C. E. Moore	Wilson.
Henry Tull	Kinston.

Honorary Members, Medical Society of the State of North Carolina.

Name.	Address.
L. McL. Tiffany	Baltimore, Md.
W. W. Keen	Philadelphia, Pa.
J. Allison Hodges	Richmond, Va.
R. L. Payne	Norfolk, Va.
W. L. Robinson	Danville, Va.
J. N. McCormack	Bowling Green, Ky.
J. C. Walton	Danville, Va.

June, 1908. Total membership Medical Society of the State of North Carolina including seven honorary members. 1,01. Of the 98 counties of the State the Physicians of 95 counties are organized in county societies in affiliation with and component branches of the State Medical Society

Three hundred and seventy-two members registered at 1908 session. This number does not include applicants for license, visitors, solicitors or others than enrolled members.

APPENDIX.

Physicians Licensed by the North Carolina State Board of Medical Examiners from the Organization of the Board in 1859 to 1908 Inclusive.

(Compiled from the Original Records by a Former Secretary.)

1st SESSION—June, 1859, Raleigh.

Name and College of Graduation.	*Address at Time Licensed.*
Coke, Lucius C.	Halifax County

2d SESSION—May, 1860, Raleigh.

Blount, W. A.	Washington
Cox, C. G.	Onslow County
Dunn, W. A.	Wake County
Ennett, Geo. N.	Onslow County
Harris, H. H.	Wake County
Leary, J. H.	Bertie County
Lilly, W. H.	Richmond County
McCombs, J. P.	Charlotte.
McKenzie, W. W.	Salisbury
McGee, J. W.	Kenansville.
Petway, R. S.	Edgecombe County
Robinson, L. W.	Sampson County
Shaw, D. W.	Moore County
Shinn, J. W.	Rowan County
Somers, W. D.	New Hanover County
St Clair, P. Fd	New Hanover County
Warren, L. P.	Edenton.

3d SESSION—May, 1861, Morganton.

Barrier, P. A.	Mt. Pleasant
Fuller, J. T.	Person County
Gaither, H. W.	Gaston County
Gidney, J. C.	Shelby
Hill, Calhoun	Duplin County
Love, Wm. J.	Wilmington

* The address noted is that of the applicant as given at the time of being licensed—many have since changed and numbers have died, but it was thought best to make the list complete containing the name of all recorded in the books kept by the Board. The college information was not kept in the early history of the Board nor were the grades made on examination recorded until 1889. The names of those making the "highest score" from 1885 to 1889, with much other instructive data were noted in a "History of the work done by the Fifth Board of Medical Examiners" by Dr. Francis Duffy and published in Volume xxxiii, N. C. Medical Journal. Nongraduates were admitted also to examination up to the year 1900. Quite a number of gentlemen, it will be noted, were licensed when undergraduates. In a very large majority of such instances it is worthy of mention the licentiates continued their studies and graduated from reputable medical colleges.—J. H. W.

Name and College of Graduation.	*Address at Time Licensed.*
Lawing, J. M.	Mecklenburg County
Pearson, R. C.	Morganton
Scales, N. M.	Wilkes County
Sheppard, J. C.	New Hanover County
Shimpock, R. A.	Mecklenburg County
Tate, H. W.	Morganton.

4TH SESSION—May, 1862, Raleigh.

Berry, David	Burke County

(The war of secession intervening, no session of the board was held until 1866, when the board met in Raleigh in fifth session, but no one appeared for examination.)

6TH SESSION—April, 1867, Raleigh.

Wood, Thos. F.	Wilmington
Powell, Thos. C.	Raleigh

7TH SESSION—April, 1868, Tarboro.

Cotten Joseph	Scotland Neck
Dowd, C. F.	Raleigh
Kirby, Geo. L.	Goldsboro

8TH SESSION—May, 1869.

Alston, Willis	Littleton
Bahnson, Henry T.	Salem
King, Joel G.	Warrenton
Montague, Alex.	Rolesville
McKee, James	Raleigh
Royster, Wisconsin Illinois	Raleigh
Staton, J. L.	Tarboro
Sugg, J. P.	Tarboro

9TH SESSION—May, 1870.

Cowan, Robt. L.	Rowan County
Ennett, W. T.	New Hanover County
Graham, McL.	New Hanover County
Kerr, Chas.	New Hanover County
Lewis, R. F.	Robeson County

10TH SESSION—May, 1871, Raleigh.

Thomas, Geo. G.	Wilmington

11TH SESSION—May, 1872, New Bern.

Attmore, G. S.	New Bern
Duffy, Francis	Richlands, Onslow County

12TH SESSION—May, 1873, Statesville.

Carr, Albert G.	Wake County
Cowan, Robt. L.	Salisbury
Gaither, J. B.	Salisbury

Name and College of Graduation.	*Address at Time Licensed.*
Green, Isaac E.	Warrenton
Hadley, J. M.	Lenoir County
Johnson, W. G.	Davie County
Murphy, P. L.	Wilmington
McLenden, W. J.	Wadesboro
Vick, J. W.	Selma

13TH SESSION—May, 1874, Charlotte.

Ardrey, Joseph A.	Pineville
Bass, H. Turner	Scotland Neck
Foster, E. S.	Louisburg
Fowler, Robert H.	Raleigh
Hall, J. B.	Scotland Neck
Moore, Thos. B.	Charlotte
Wilder, Hillary M.	Raleigh

14TH SESSION—May, 1875, Wilson.

Bullock, D. W.	Tarboro
Cooke, W. J.	Louisburg
Eagers, C. W.	Sparta
Grimes, R. J.	Robersonville
Moore, C. E.	Battleboro
Land, H. G.	Currituck County
Murphy, W. C.	Clinton
Picot, L. J.	Littleton
Sills, R. A.	Nashville
Speight, R. H.	Tarboro
Thorpe, F. I.	Rocky Mount
Taylor, Joshua	Tarboro
Whitehead, W. H.	Battleboro

15TH SESSION—May, 1876, Fayetteville.

DeRossett, M. I.	Wilmington
McNeill, Jas. W.	Fayetteville
McMullan, Jno. H.	Hertford
McKimmon, Wm. H.	Fayetteville
McMillan, Jno. D.	Lumberton
Murdock, Wm. A.	Rowan County
Tull, Henry	Kinston

16TH SESSION—May, 1877, Salem.

Alford, H. M.	Greensboro
Beeker, E. Nelson	Clayton
Bitling, J. A.	Germanton
Graham, Geo. W.	Raleigh
Griffith, J. F.	Clemmonsville
Hill, L. H.	Germanton
Hunt, L. G.	Huntsville

Name and College of Graduation.	*Address at Time Licensed.*
Lewis, Richard H.	Raleigh
Long, Geo. W.	Graham
Roberts, J. D.	Mt. Olive
Roan, Preston	Winston
Snivers, N. S.	Salem
Scales, Jeff	Reidsville
Wilhelm, W. W.	Morrisville
Wilson, W. R.	Townsville

17TH SESSION—May, 1878, Goldsboro.

Barringer, Paul B.	Charlotte
Bryan, C. G.	Rich Square
Cobb, Wm. H. H.	Goldsboro
Faison I. Wellington	Fulton
Gregory, Richard K.	Greensboro
Hornaday, E. A.	Willow Grove
Jones, W. W.	Raleigh
Knox, A. W.	Raleigh
Lyon, D. Stuart	Charlotte
Lee, Algernon M.	Clinton
McClellan, J. R.	Mooresville
McLean, Peter	Shoe Heel
Noble, Richard J.	Selma
Pollock, Jno. A.	Kinston
Tucker, Jno. H.	Henderson

18TH SESSION—May, 1879, Greensboro.

Abernathy, Wm. Lafayette	Hickory
Anderson, Thos. Eli	Statesville
Beall, Wm. P.	Greensboro
Balsley, Turner E.	Greensboro
Bradsher, Chas. Edward	Person County
Baker, Julian M.	Tarboro
Battle, C. M.	Rocky Mount
Burgin, Henry F.	Swanannoa
Cook, Wm. Franklin	Jamestown
Cox, Joseph Jno.	New Garden
Covington, James M.	Rockingham
Freeman, Richard A.	Alamance County
Glenn, Chas. M.	Greensboro
Gilbert, Wm. Jay	Fremont
Gunn, James L.	Yanceyville
Harris, Wartlett Y.	High Point
Hargrove, Robt. H.	Robersonville
Haywood, Hubert, Bellevue Med. Coll., 1879	Raleigh
Hollingsworth, Wm. Robt., Jeff. Med. Coll., 1877	Mt. Airy

Name and College of Graduation. *Address at Time Licensed.*

Johnson, Norman M., Washington Univ., Balto., 1876.....Durham
Jones, Simmons B., Univ. of Va., 1878.....Charlotte
Lee, Henry W., Univ. of Pa., 1876.....Raleigh
Lindsay, Edward, Univ. of Va., 1869.....Greensboro
Mercer, Wm. P., Univ of N. Y., 1879.....Toisnot
McDonald, Alexander D., Wash. Univ., Balto., 1877.....Wilmington
Prince, David M., Med. Coll. of S. C., 1871.....Laurel Hill
Robinson, O. P., Bellevue Med. Coll., 1877.....Fayetteville
Swindell, Chas. A., Wash. Univ., Balto., 1879.....Greenville
Stafford, Wm. Gaston, Nongraduate, 1 course.....Orange County
Sexton, Jas. A., Univ. of Md., 1873.....Raleigh
Speed, Edward A., Wash. Univ., Balto., 1869.....Person County
Sledge, James Thos., Univ. of Md., 1877.....Warren County
Stevenson, Sam'l Whitfield, Wash. Univ., Balto., 1869.....Mooresville
Trantham, Henry T., Univ. of N. Y., 1875.....Salisbury
Walton, John C., Louisville Med. Coll., 1878.....Prospect Hill
Winston, Jno. Thos., Univ. of Md., 1875.....Youngsville

19TH SESSION—May, 1880, Wilmington.

Adams, Robt. Harris, Louisville Med. Coll., 1875.....Gastonia
Anders, Wm. King, Phila. Univ., 1870.....Gravel Hill
Burbank, Thos. S., nongraduate, 1 course.....Wilmington
Collins, Jno. A., Bellevue, 1869.....Enfield
Dillard, Richard Jr., Jeff. Med. Coll., 1879.....Edenton
Frontis, David B., Univ. of Md., 1878.....Lexington
Galloway, Walter C., Wash. Univ., Balto., 1874.....Snow Hill
Herring, Needham Bryan, Univ. of N. Y., 1861.....Toisnot
Hill, Melmoth Wilson, Wash. Univ., Balto., 1869.....Statesville
Harris, Thos. W., Univ. of N. Y., 1868.....Chapel Hill
Huntley, Abel Braxton, Coll. P. & S., Balto., 1879.....Wadesborough
Hunter, Lester Walter, Bellevue, 1875.....Charlotte
Irwin, John, Louisville Med. Coll., 1878.....Villa Franca
Ivy, Henry Tracy, Med. Coll. of S. C., 1880.....Fayetteville
Matthews, Geo. E., Wash. Univ., Balto., 1870.....Ringwood
Montague, Seth J., Bellevue, 1872.....Winston
McNider, St Clair V., Wash. Univ., Balto., 1879.....Jackson
Nicholson, James L., Univ. of N. Y., 1870.....Richlands
Powers, Kinchen Jones, Wash. Univ., Balto., 1875.....Pender County
Powers, Luther Milton, Wash. Univ., Balto., 1877.....Plymouth
Pool, Chalmers M., Coll. P. & S., Balto., 1880.....Salisbury
Speed, Eugene T., Washington Univ., Balto., 1875.....Tarboro
Schoonwald, John T., Long Island Med. Coll., 1879.....Wilmington
Stancill, John McQ., Univ. of Md., 1872.....Rockingham
Whitehead, John, Univ. of Penn., 1880.....Salisbury
West, Geo. H., Univ. of N. Y., 1872.....Newton

20TH SESSION—May, 1881, Asheville.

Name and College of Graduation. *Address at Time Licensed.*

Battle, Adolphus J., Coll. P. & S., Balto., 1881.....Earpsboro
Brownson, Wm. C., Univ. of N. Y., 1878.....Asheville
Betts, Henry Watson, Univ. of N. Y., 1878.....Albemarle
Baynes, Ralph S., Coll. P. & S., Balto., 1879.....Person County
Cain, D. J., Med. Coll. of S. C., 1838.....Asheville
Crump, Wm. L., Jeff. Med. Coll., 1879.....Rowan County
Crowell, Thos. A., Jeff. Med. Coll., 1875.....Monroe
Craigmiles, James G., Vanderbilt University, 1881....Buncombe County
Faison, James H., Bellevue, 1881.....Faison
Fletcher, Marshall Hall, Bellevue, 1881.....Shufordsville
Gardner, Chas. K., Med. Coll. of Va., 1880.....Laurinburg
Hunt, Chas. W., Coll. P. & S., Balto., 1880.....Brevard
Hilliard, William David, Jeff. Med. Coll., 1878.....Asheville
Gentry, Levi C., Univ. of N. Y., 1860.....Ashe County
Jordan, Thos. Murphy, Coll. P. & S., Balto., 1881.....Hillsboro
Lilly, Henry W., Univ. of Va., 1878.....Fayetteville
Lyle, Sam'l Harley, nongraduate, 1 course, Vanderbilt Univ....Franklin
Lackey, Reuben L., S. C. Med. Coll., 1881.....Amity Hill
Moore, Jno. Wesley, Coll. P. & S., Balto., 1880.....Cabarrus County
Meisenheimer, Theo. F., Univ. of N. Y., 1880.....Stanly County
McCorkle, Jno. Macon, Jeff. Med. Coll., 1880.....Newton
McKenzie, Jno. Chas., Jeff. Med. Coll., 1877.....Laurel Hill
McMillan, Jno. Luther, Univ. of Md., 1881.....Robeson County
Norcop, Percy T., Univ. of Edinburgh, 1876.....Asheville
Payne, Robt. Lee, Jeff. Med. Coll., 1881.....Lexington
Parr, Albert Dunn, Coll. P. & S., Balto., 1881.....Wake County
Pharr, Theo. F., Bellevue, 1875.....Concord
Phillips, Matt Dalton, Univ. of N. Y., 1880.....Stokes County
Reagan, Wm. Latta, Coll. P. & S., Balto., 1879.
Robinson, Frank, Bellevue, 1879.....Gastonia
Robinson, Thos. Booker, Bellevue, 1879.....Wake County
Staton, James R., Bellevue, 1880.....Tarboro
Walde, Sam'l P., Univ. of Nashville, 1868.....Wake County
Whitesides, Benj. F., Univ. of Md., 1877.....Hickory
Wilson, Robt. I., Univ. of N. Y., 1879.....Swannanoa
Williams, Jno. Hay, Univ. of Iowa, 1862.....Asheville
Weaver, Henry Bascom, Washington Univ., Balto., 1872....Weaverville
Winston, Cornelius.....Franklinton

21ST SESSION—May, 1882, Concord.

Anderson Chas. Felix, Louisville Med. Coll., 1882.....Mocksville
Battle, Kemp P. Jr., Univ. of Va., 1881.....Chapel Hill
Bradshaw, Wm. G., Coll. P. & S., Balto., 1881.....Lexington
Clingman, Jno. J., Univ. of Md., 1876.....Huntsville

Name and College of Graduation. *Address at Time Licensed.*

Ferguson, Henry B., Jeff. Med. Coll., 1882.....Littleton
Gunter, Jno. B., Jeff. Med. Coll., 1882.....Durham
Irwin, Jno. R., Univ. of Md., 1879.....Alexadriana
Kirkman, L. E., Louisville Med. Coll., 1875.....Smithfield
Lloyd, Geo. S., Univ. of Md., 1881.....Tarboro
Morrison, Robt. H., Louisville Med. Coll., 1881.....Shelby
Meisenheimer, Chas. A., Univ. of N. Y., 1881.....Cabarrus County
McBrayer, Jno. H., Atlanta Med. Coll., 1882.....Cleveland County
Royster, Thos. S., Bellevue, 1882.....Henderson
Strickland, James T., Jeff. Med. Coll., 1882.....Surry County
Templeton, James M., Balto. Med. Coll., 1882.....Dallas
Smith, Roger E., Bellevue, 1882.....Princeton
Wilson, Albert R., Jeff. Med. Coll., 1882.....Greensboro
Whittington, Willard P., Coll. P. & S., Balto., 1882.....Burnsville
Young, Robt. S., Univ. of N. Y., 1881.....Matthews

22D SESSION—May, 1883, Tarboro.

Anderson, James H., Univ. of N. Y., 1882.....Tarboro
Braswell, James C., Univ. of Md., 1883.....Whitakers
Bunn, Maurice O., Univ. of N. Y., 1883.....Wilmington
Boddie, Needham P., Coll. P. & S., Balto., 1883.....Palmyra
Bobbitt, Wm. H., Coll. P. & S., Balto., 1882.....Rockingham
Clark, Henry I., Univ. of Md., 1879.....Hamilton
Faison, Wm. W., Jeff. Med. Coll., 1878.....Goldsboro
Ferguson, Kenneth M., Coll. P. & S., Balto., 1882.....Manchester
Edwards, Grandison C., Bellevue, 1883.....Hookerton
Gregory, Oscar, Jeff. Med. Coll., 1854.....Halifax
Harris, Fletcher R., Univ. of Va., 1881.....Henderson
Hudson, Wm. L., Kentucky School of Med., 1876.....Hawley's Store
Hodges, James M., Bellevue, 1883.....Mount Olive
Johnson, Seth T., Univ. of N. Y.....Tarboro
Marriott, Henry B., Univ. of Md., 1883.....Battleboro
Macon, Philemon J., Univ. of Md., 1883.....Warrenton
Moore, Edwin G., Univ. of Md., 1883.....Toisnot
McLean, Neil M., Coll. P. & S., Balto., 1883.....Robeson County
McNeill, Dan'l B.....Brunswick County
McDowell, Wm. O., Univ. of Pa., 1876.....Scotland Neck
Long, Benj. L., Univ. of Md., 1881.....Hamilton
Rogers, Sion H., Bellevue, 1883
Street, Nathan H., Univ. of Va., 1880.....Pollocksville
Stevens, Jno. A., Jeff. Med. Coll., 1883.....Clinton
Summerell, E. Mitchell, Univ. of Penn., 1883.....Salisbury
Smith Weldon.....Scotland Neck
Scarborough, James H., Coll. of P. & S., Balto., 1882.....Trenton
Schenck, Dodson R., Jeff. Med. Coll., 1883.....Guilford County

Name and College of Graduation. *Address at Time Licensed.*

Taylor, Isaac M., Coll. P. & S., New York, 1882.....Chapel Hill
Whitaker, Henry H., Univ. of Md., 1883.....Battleboro
Wimberly, Geo. L., Univ. of Md., 1883.....Tarboro

23D SESSION—May, 1884, Raleigh.

Adams, M. R., Univ. of Md., 1878.....Iredell County
Battle, J. T. J., Coll. P. & S., Balto., 1884.....Johnston County
Burroughs, James A., Louisville Med. Coll., 1884.....Asheville
Brown, Frank W., Bellevue, 1883.....Greenville
Best, B. W., Coll. P. & S., Balto., 1884.....Pitt County
Dixon, R. E. L., Jeff. Med. Coll., 1884.....Wilmington
Edwards, William, Coll. P. & S., Balto., 1884.....Nash County
Freeman, W. G., Univ. of Penn., 1861.....Murfreesboro
Futrell, M. H., Coll. P. & S., Balto., 1884.....Murfreesboro
Gray, Robah F., Louisville Med. Coll., 1877.....Winston
Grimsley, Jos. Edgar, Univ. of Va., 1883.....Snow Hill
Henderson, Richard B., Univ. of Md.....Warren County
Herron, Alexander, Med. Coll. of S. C., 1881.....Charlotte
Long, Jno. Wesley, Vanderbilt University, 1883.....Randleman
Manning, John M., Bellevue, 1882.....Pittsboro
Murray, Hosea P., Coll. P. & S., Balto., 1884.....Wallace
McCumber, Jno. L., Long Island Med. Coll., 1883.....Wilmington
McMillan, Benj. F., Univ. of Md., 1882.....Robeson County
McSwain, T. C., Coll. P. & S., N. Y., 1884.....Fayetteville
Pender, Wm. Dorsey.....Martin County
Pritchard, Wm. Broaddus, Coll. P. & S., Balto.....Wilmington
Perry, Mark P., Coll. P. & S., Balto., 1884.....Macon
Purefoy, Geo. W., Jeff. Med. Coll., 1876.....Chapel Hill
Richardson, W. E., Univ. of Pa., 1868.....Wake County
Robinson, Geo. J., Jeff. Med. Coll., 1884.....Smithfield
Spicer, James, Bellevue, 1884.....Goldsboro
Sikes, Ginnada Thos., Univ. of Md., 1884.....Grissom
Sasser, Louis L., Univ. of Va., 1883.....Smithfield
Smith, Julian A., Univ. of N. Y., 1883.....Wilmington
Williams, Herbert C., Coll. P. & S., Balto., 1882.....Johnston County
White, Edmund Thos., Vanderbilt Univ., 1882.....Oxford
Whitfield, Wm. Cobb, Univ. of Md., 1884.....Seven Springs
Whitley, Virgil A., Univ. of Md., 1884.....Norwood
Williams, T. B., Univ. of Md., 1877.....Ridgeway

24TH SESSION—May, 1885, Durham.

(Members board present: Drs. W. R. Wood, J. A. Reagan, A. W. Knox, P. L. Murphy, F. Duffy and W. J. H. Bellamy.)

Ashe, Edmund S., Coll. P. & S., Balto., 1885.....Wadesboro
Ashby, Thos. B., Coll. P. & S., Balto., 1885.....Mt. Airy

Name and College of Graduation. *Address at Time Licensed.*

Archey, Leon M., Coll. P. & S., Balto., 1880.....Concord
Alexander, Annie Louise, Woman's Med. Coll., Philada., 1884, Mecklenburg County
Adams, Chas. Ed., Univ. of Md.....Gastonia
Atwater, Alfred S., Vanderbilt University, 1885.....Chatham County
Bell, James S., Univ. of Md., 1884.....Matthews
Booth, Samuel D., nongraduate, 1 course, Med. Coll., Va., 1867...Oxford
Booth, Patrick, Med. Coll. of S. C., 1875.....Knap of Reeds
Bullock, Thos. C., Coll. P. & S., Balto., 1885.....Blockersville
Benton, James H., Univ. Pa., 1876.....Newton Grove
Brown, Zeno, Bellevue, 1883.....Greenville
Bolton, Mayland, Jeff. Med. Coll., 1885.....Rich Square
Crisp, Wm. B., Coll. P. & S., Balto., 1885.....Coffee
Carr, John B., Univ. of Md., 1885.....Old Sparta
Cooper, Fleet John, Coll. P. & S., Balto., 1884.....Hives
Cope, Geo. C., Coll. P. & S., Balto., 1885.....Rowan County
Dew, Samuel B., Univ. of Md., 1885.....Wilson
Dalton, David N., Univ. of N. Y., 1881.....Winston
Dodson, Henry H., Med. Coll. of Va., 1882.....Milton
Faison, John M., Univ. of Va., 1884.....Faison's
Ferrebee, Edwin B., Coll. P. & S., Balto., 1885.....Beleross
Hardee, P. R., Coll. P. & S., Balto., 1885.....Durham
Harrell, James Joseph, Univ. of Md., 1883.....Gulf
Hicks, Maltis L., Coll. P. & S., Balto., 1885.....Wakefield
Harrell, William H., Med. Coll. of Va., 1885.....Williamston
Hathaway, Burton W., Louisville Med. Coll., 1885.....Edenton
Hays, James McIntosh, Med. Coll. of S. C., 1883.....Wilton
Harding, Thos. R., Coll. P. & S., Balto., 1885.....Huntersville
Jordan, David B., Jeff. Med. Coll., 1885.....Grantham's Store
Klutz, Paul J., nongraduate, 1 course, Coll. P. & S., Balto., 1885, Gold Hill
Keever, Adolphus P., Jeff. Med. Coll., 1882.....Keeversville
Knight, Josiah B. H., Coll. P. & S., Balto.....Eagle Pass
Lucas, David, Balto. Med. Coll.....Enfield
Maynard, Atlas A., Coll. P. & S., Balto., 1883.....Clayton
Montgomery, Samuel L., Univ. of N. Y., 1879.....Monroe
McKay, Joseph Foy, Med. Coll. of S. C., 1884.....Averysboro
McLeod, Gilbert, Univ. of Md., 1882.....Anson County
Nance, Geo. B., Jeff. Med. Coll., 1885.....Olive Branch
Nicholson, John T., Coll. P. & S., Balto., 1885.....Bath
Nicholson, Samuel T., Coll. P. & S., Balto., 1881.....Washington
Pate, Wm. T., Coll. P. & S., Balto., 1885.....Laurel Hill
Parris, David C., Atlanta Med. Coll., 1882.....Hillsboro
Perry, James C., Univ. of Md., 1885.....Newbegun
Pharr, Wm. W., Coll. P. & S., Balto., 1881.....Query's
Pratt, Chas. S., Coll. P. & S., N. Y., 1884.....Raleigh

Name and College of Graduation. *Address at Time Licensed.*

Powell, Wm. E., Coll. P. & S., Balto., 1882.....Greene County
Ritter, Fred. W., nongraduate, 1 course, Coll. P. & S., Balto.....Shiloh
Reinhart, Dabney B., nongraduate, Univ. of Va.....Thomasville
Smallwood, John P., Univ. of Md., 1885.....Leinston
Spruill, Wm. T., Univ. of Md., 1885.....Youngsville
Sloan, Henry, Med. Coll. of S. C., 1879.....Lisbon
Sawyer, Chas. W., Univ. of Md., 1885.....Elizabeth City
Summerfield, Hugh W., Louisville Med. Coll., 1876....Guilford County
Tayloe, David Thomas, Bellevue, 1885.....Washington
Turlington, Willis E., Coll. P. & S., Balto., 1884.....Elevation
Wilson, Wm. Hill, Louisville Med. Coll., 1885.....Dallas
Williams, Egbert P., Univ. of Va., 1881.....Cedar Creek
Whitesides, Joseph C., Univ. of Md., 1877.....Bridgewater
Whittaker, Romulus A., Coll. P. & S., Balto., 1885.....Trenton
Webb., Benj. G., Louisville Med. Coll., 1885.....Asheville
White, Thos. Newby, Coll. P. & S., Balto., 1882.....Belvidere
Baird, John H., nongraduate.....Briggsville
Brank, Joseph B., nongraduate, 1 course, Atlanta Med. Coll., 1884, Weaverville
Coleman, Joseph Ira, Coll. P. & S., Balto., 1885.....Hurdle's Mills
Caldwell, Daniel G., Univ. of Md., 1885.....Charlotte
Covington, Furman P., Univ. of N. Y., 1885.....Norwood
Dorsett, Harrison W., nongraduate Jeff. Med. Coll., 1 course, 1861, Bethany
Emmitt, John M., Univ. of Md., 1885.....Hope Mills
Goley, Wm. R., Coll. P. & S., Balto., 1885.....Long Branch
Hughes, Francis W., Univ. of Pa., 1880.....New Bern
Hill, Albert A., nongraduate 1 course, Jeff. Med. Coll., 1855..Lexington
Jordan, Arch. C., Coll. P. & S., Balto., 1881.....Caldwell Institute
Littleton, John Wm., Coll. P. & S., Balto., 1885.....Albemarle
Muller, Robt. L., Louisville Med. Coll., 1884.....Ringwood
Nichols, Chas. G., nongraduate, Bellevue, 1880.....Mt. Tirzah
Fox, Millard F., Coll. P. & S., Balto., 1881.....Greensboro
Leggett, Kenelm, Ky. School of Med., 1884.....Palmyra
Rogers, Joseph E., So. Med. Coll., Ga., 1885.....Alexander
Hodges, James A., Univ. of Va., 1883.....Fayetteville
Person, Addison G., Coll. P. & S., Balto., 1885.....Fremont
Wise, James A., nongraduate, 1 course, Coll. P. & S., Balto., 1880, Red Mountain
Kennedy, Wm. P., Univ. of Md., 1885.....Warsaw
Powers, John B., Long Island Med. Coll., N. Y., 1878.....Wake Forest

24TH SESSION (Adjourned)—August, 1885, Raleigh (and Adjourned Session at Asheville Next Day Combined).

(Members of Board present: Drs. Knox, Wood, Bellamy, Reagan, Murphy and Duffy.)

Allen, Rufus L., Univ. of Md., 1885.....Waynesville
Abernathy, Jacob F., nongraduate, 1 course, Louisville, 1882....Murphy

Name and College of Graduation. *Address at Time Licensed.*

Anderson, James Robt., Univ. of La., 1882.....Lincoln County
Broughton, Leonard G., Ky. School of Medicine, 1885....Wilson County
Broughton, Chas. V., Ky. School of Medicine, 1885.....Wilson County
Beall, James F., nongraduate, 1 course, Univ. of N. Y., 1865,
Davidson County
Bulla, Alexander, nongraduate, 1 course, Jeff. Med. Coll., 1855,
Davidson County
Bagwell, Wm. H., Coll. P. & S., Balto., 1883.....Pactolus
Bennett, Aurelius M., nongraduate, 1 course, Med. Coll. of Va., 1884,
Jackson County
Councill, Jeff. B., Coll. P. & S., Balto., 1885.....Watauga County
Cooper, Abner T., Coll. P. & S., Balto., 1884.....Clinton
Doughton, George, Coll. P. & S., Balto., 1884.....Alleghany County
Gibson, McW., Univ. of Md., 1884.....Statesville
Hill, James.....Davidson County
Harris, Isaac A., nongraduate, 1 course, Jeff. Med. Coll., 1860,
Buncombe County
Ivy, Will Parsons, Univ. of Md., 1883.....Catawba County
Little, H. McD.....Alexander County
Lovelace, Thos. B., Coll. P. & S., Balto., 1883.....Rutherford County
Kent, Alfred A., Jeff. Med. Coll., 1885.....Lenoir
Killian, Benj. R., Louisville Med. Coll., 1885.....Alexander County
Littlejohn, Eugene M., Balto. Med. Coll., 1885.....Warrenton
Lewis, Geo. William, nongraduate, 1 course, Univ. of Md., 1885,
Nash County
Lucas, Jesse B., Univ. of Md., 1875.....Sampson County
Patton, John W., nongraduate, 1 course, Univ. of Nashville, 1879.
Phillips, Jordan B., Med. Coll. of S. C., 1884.....Watauga County
Pearsall, Jere R., nongraduate, 1 course, Univ. of Va., 1883..Morganton
Robbins, Alex. H., nongraduate, 1 course, Med. Col. of S. C., 1857,
Brunswick County
Register, Edward Chauncey, Univ. of N. Y., 1885.....Rowan County
Rozzelle, Chas. S., nongraduate, 1 course, Univ. of Pa., 1874,
Lincoln County
Straw, John Robert, nongraduate, 1 course, Coll. P. & S., Balto., 1884,
Ashe County
Speight, John Wesley, Ky. School of Med., 1885.....Hertford County
Tilson, Jacob C., nongraduate, 1 course, Coll. P. & S., Balto., 1881,
Madison County
Teague, James H., nongraduate, 1 course, Jeff. Med. Coll., 1881,
Jackson County
*Way, Joseph Howell, nongraduate, 1 course, Med. Coll. of Va., 1884,
Asheville
Young, G. E., nongrad., 1 course, Univ. of Pa., 1858..Rutherford County
Lowry, F. W., Univ. of Md., 1883.....Pasquotank County

*Made highest grade.—N. C. Medical Journal, Vol. xxxiii, p. 50.

25TH SESSION—May, 1886, New Bern.

(Members of Board present: Drs. W. R. Wood, J. A. Reagan, W. J. H. Bellamy, A. W. Knox, W. Alston, F. Duffy and P. L. Murphy.)

Name and College of Graduation.	*Address at Time Licensed.*
Armond, John McD., Univ. of Md., 1880	Mecklenburg County
Buffaloe, A. J., Bellevue, 1886	Raleigh
Braswell, M. R., Univ. of Md., 1886	Rocky Mount
Black, James C., Univ. of Md., 1886	Cabarrus County
Burt, Benj. W., Coll. P. & S., Balto., 1886	Wake County
Boyette, James M., Coll. P. & S., Balto., 1885	Cumberland County
Chapin, Hiram T., Louisville Med. Coll., 1886	Chatham County
Clark, K. M., Balto. Med. Coll., 1885	Vance County
Cox, Benj. F., Coll. P. & S., Balto., 1886	Palmersville
Crawford, Wm. B., Bellevue Med. Coll., 1886	Goldsboro
Faison, J. Alexander, Jeff. Med. Coll., 1886	Wayne County
Foard, Fred. T., Louisville Med. Coll., 1886	Catawba County
Gates, F. P., Bellevue Med. Coll., 1886	Lenoir County
Harris, John H., Bellevue Med. Coll., 1886	Wake County
Gurken, Chas. R., Univ. of Pa., 1885	Jonesville
Hassell, Starke, Coll. P. & S., Balto., 1886	Tyrrell County
Hollingsworth, Ed. M., Coll. P. & S., Balto., 1886	Mt. Airy
Hollingsworth, J. M., Coll. P. & S., Balto., 1886	Mt. Airy
Ingraham, Chas. B., Jeff. Med. Coll., 1886	Montgomery County
Kernodle, G. W., Coll. P. & S., Balto., 1886	Alamance County
Leary, Thomas H., Univ. of Md., 1886	Edenton
Monroe, John P., Univ. of Va., 1885	Durham
Moore, John L., Coll. P. & S., Balto., 1886	Halifax County
Moore, Brutus C., Jeff. Med. Coll., 1886	Anson County
Mann, J. J., 1 course, Balto. Med. Coll., 1886	Louisburg
Munroe, W. A., Univ. of Md., 1886	Moore County
McClure, Samuel C., Jeff. Med. Coll., 1878	Statesville
McCullers, J. J. L., Coll. P. & S., Balto., 1886	Raleigh
McKimmon, Archie, Univ. of Md., 1886	Robeson County
McLaughlin, John E., Univ. of Md., 1886	Statesville
Powell, James H., Coll. P. & S., Balto., 1886	Greene County
Pope, M. T. (col.) Leonard Med. Coll., 1886	Northampton County
Phillips, Theo. J., Coll. P. & S., Balto., 1886	Stokes County
Petrie, A. L., Coll. P. & S., Balto., 1886	Forsyth County
Ramseur, Geo. A., Jeff. Med. Coll., 1880	Catawba County
Riddick, Ivy G., Bellevue Med. Coll., 1886	Wake County
Rogers, James Rufus, Coll. P. & S., Balto., 1886	Wake County
Scruggs, L. A. (col.), Leonard Med. Coll., 1886	Liberty
Tate, Robt. W., Long Island Med. Coll., 1879	Duplin County
Ward, Wm. H., Univ. of Md., 1881	Plymouth
Woodley, Chas. P., Bellevue Med. Coll., 1886	Kinston
Wynne, Thos. P., Univ. of Md., 1886	Warren County

Name and College of Graduation. *Address at Time Licensed.*

Wilson Wm. E., Louisville Med. Coll., 1886.....Davidson
Williams, John T. (col.), Leonard Med. Coll., 1886.....Charlotte
Young, L. B., Coll. P. & S., Balto., 1886.....Wake County
Zollicoffer, D. B., Coll. P. & S., Balto., 1881.....Northampton County

26TH SESSION—May, 1887, Charlotte.

(Members of Board present: Drs. W. R. Wood, W. J. H. Bellamy, A. W. Knox, P. L. Murphy, J. A. Reagan, Frank Duffy and Willis Alston.)

Abernathy, Henry L., Louisville Med. Coll., 1886.....Hickory
Austin, James A., Jeff. Med. Coll., 1887.....Union County
Ashcraft, John E., Univ. of N. Y., 1887.....Monroe
Belk, John M., Univ. of N. Y., 1887.....Monroe
Byers, J. Wellington, Atlanta Med. Coll., 1882.....Charlotte
Clark, Whipple W., Jeff. Med. Coll., 1886.....Buncombe County
Capehart, Alanson, Bellevue Med. Coll., 1887.....Bertie County
Davidson, Wm. L., Univ. of Md., 1887.....Mecklenburg County
Daniel, Starke S., Univ. of Md., 1887.....Hertford County
Doak, James S., Univ. of N. Y., 1887.....Rockingham County
Fearington, J. P., Univ. of Md., 1887.....Chatham County
Fields, Adolphus, Jeff. Med. Coll., 1887.....Kinston
Garrett, Frank J., 1 course, Univ. Md., 1887.....Rockingham County
Gibbon, Robt. L., Jeff. Med. Coll., 1887.....Charlotte
Goodwin, A. W., Bellevue Med. Coll., 1887.....Raleigh
Grady, James C., Univ. of Balto., 1887.....Wayne County
Henderson, Wm. B., Univ. of Md., 1887.....Mecklenburg County
Hoover, Andrew J., Jeff. Med. Coll., 1887.....Lincolnton
Hodge, Richard D., Coll. P. & S., Balto., 1887.....Raleigh
Jones, Amos Fielding, Coll. P. & S., Balto., 1885.....Wilkesboro
Jones, Hiram C., 1 course, Coll. P. & S., Balto., 1886....Wilkes County
Justice, John C. B., Univ. of N. Y., 1886.....Leicester
King, Ogden D., Long Island Hosp. Coll. Med., 1887.....Wilmington
McAnally, Charles B., Univ. of N. Y., 1887.....Rockingham County
McDuffie, James H., Univ. of Md., 1887.....Moore County
Neal, John W., Univ. of N. Y., 1884.....Stokes County
Pemberton, Wm. D., Univ. of Md., 1887.....Stanly County
Ray, John L., Coll. P. & S., Balto., 1887.....Burnsville
Shields, Henry B., Atlanta Med. Coll., 1887.....Moore County
Stanton, David A., Vanderbilt University, 1887.....Randolph County
Strickland, Ed. F., Univ. of N. Y., 1887.....Forsyth County
Winchester, Frank M., Jeff. Med. Coll., 1883.....Monroe
Winborne, Robt. W., Univ. of Md., 1887.....Chowan County
Williams, Buxton B., Univ. of Md., 1883.....Warrenton

27TH SESSION—May, 1888, Fayetteville.

(Members present: Drs. W. R. Wood, Francis Duffy, A. W. Knox, J. A. Reagan, P. L. Murphy, Willis Alston and W. J. H. Bellamy.)

Name and College of Graduation.	*Address at Time Licensed.*
*Alexander, Henry Q., Univ. of Md., 1887	Mecklenburg County
Brantley, Hassell, Univ. of Md., 1888	Stanhope
Cox, B. T., Univ. of Md., 1888	Greenville
Cheatham, Archibald, Univ. of Md., 1888	Henderson
Cherry, Wm. F., Univ. of Md., 1887	Tarboro
Chenault, Wm. F., Univ. of Md., 1888	Catawba
Caveness, J. W., Jeff. Med. Coll., 1888	Greensboro
Duffy, Leinster, 1 course, Coll. P. & S., Balto., 1885	New Bern
Ferree, T. T., Coll. P. & S., Balto., 1887	Brown's Summit
Flow, L. S., Univ. of N. Y., 1888	Clear Creek
Farrier, Geo. B., Univ. of N. Y., 1888	Kenansville
Gattis, Robt. L., Univ. of Md., 1888	Bellevoir
Goelet, E. B., Univ. of La., 1888	Brevard
Hughes, Geo. R., Univ. of N. Y., 1888	Snow Hill
Harrison, A. S., Univ. of Md., 1888	Ringwood
Hilliard, Charles E., Jeff. Med. Coll., 1888	Asheville
Jenkins, John H., Ky. School Med., 1887	Dallas
Lott, Henry S., Univ. of Ga., 1884	Winston
Lucas, Giles, Coll. P. & S., Balto., 1887	Johnston County
Loftin, Preston B., Univ. of Md., 1888	Hookerton
Ledbetter, E. A., Univ. of Md., 1888	Jamestown
Lynn, Isaac M., Bellevue Med. Coll., 1888	Earpsboro
Martin, W. C., Coll. P. & S., Balto., 1888	East Bend
Merriwether, Frank T., Univ. of Louisville, 1886	Asheville
Munns, L. A., Coll. P. & S., Balto., 1885	Smithfield
Morrill, J., Univ. of Md., 1888	Farmville
Moore, Aaron M. (col.), Leonard Med. Coll., 1888	Rosindale
McCullers, Eugene H., Bellevue Med. Coll., 1888	Clayton
McGee, James W., Jr., Bellevue Med. Coll., 1888	Raleigh
Reynolds, R. A. (col.), Leonard Med. Coll., 1888	Murfreesboro
Rose, E. P., Coll. P. & S., Balto., 1888	Wade
Sherrill, J. G., Louisville Med. Coll., 1888	Salisbury
Stamps, Thomas, Univ. of Louisville, 1888	Milton
Travis, Elma (female), Univ. of Mich., 1883	Raleigh
Walker, Jesse O., Vanderbilt Univ., 1888	Randleman
Wyche, C. D., Univ. of Md., 1888	Dabney

28TH SESSION—April, 1889, Elizabeth City.

(Members of Board present: Drs. W. R. Wood, A. W. Knox, J. A. Reagan, W. Alston, P. L. Murphy, F. Duffy and W. J. H. Bellamy.)

Anderson, Albert, Univ. of Va., 1888	Wilson
Benton, C. M., Jeff. Med. Coll., 1889	Newton Grove

*Highest grade.—N. C. Medical Journal, Vol. xxxiii, p. 50.

Name and College of Graduation.	*Address at Time Licensed.*
Battle, James P., Univ. of Md., 1888	Rocky Mount
Banks, Braxton, Jeff. Med. Coll., 1889	Banks P. O.
Cannaday, S. H., Univ. of Va., 1887	Wilton
Cox, E. L., Univ. of Md., 1889	Catherine Lake
*Cobb, Wm. H. H., Jr., Jeff. Med. Coll., 1889	Goldsboro
Denning, O. L., Univ. of Va	Dunn.
Davis, John A., Univ. of Md., 1889	Tarboro.
Edgerton, H. K., Vanderbilt Univ., 1889	Kenly
Fitzgerald, J. V., Jeff. Med. Coll., 1889	Linwood
Frey, J. H., 1 course Univ. of Va., 1888	Greensboro
Graham, Wm. A., Coll. P. & S., N. Y., 1888	Charlotte
Hall, H. H. (col.), Leonard Med. Coll., 1889	Salisbury
Haskins, T. J., Univ. of Va., 1886	Edenton
Highsmith, J. F., Jeff. Med. Coll., 1889	Hives P. O.
Houston, E. Q., 1st course Univ. of Va., 1888	Mount Mourne
Hughes, W. H. (col.), Leonard Med. Coll., 1888	Greensboro
Jenkins, Jeff D., Univ. of N. Y., 1889	Tarboro
King, Edward S., Univ. of Md., 1889	Statesville
Mask, T. R. (col.), Leonard Med. Coll., 1889	Rockingham
Marsh, J. H., Jeff. Med. Coll., 1889	Gray's Creek
Michaux, E. R., Univ. of N. Y., 1889	Greensboro
McAden, G. M., Univ. of Md., 1889	Charlotte
McMullan, Thos. Shelton, Univ. Va., 1888, Univ. N. Y., 1889, Hertford	
Nicholson, W. H., Univ. of Md., 1889	Franklinton
Nicholson, P. A., Coll. P. & S., Balto., 1889	Washington
Ross, C. E., Univ. of Md., 1889	Charlotte
Ross, W. F., Univ. of N. Y.	Hot Springs
Richardson, W. J., Jeff. Med. Coll., 1889	Greensboro
Renn, Geo. A., Univ. of N. Y., 1889	Raleigh
Stokes, W. F., Louisville Med. Coll., 1888	Magnolia
Starnes, E. C., Jeff. Med. Coll., 1888	Asheville
Sutton, W. G., Jeff. Med. Coll., 1889	Seven Springs
Sugg, Edgar H., Univ. of N. Y., 1889	Snow Hill
Strong, Chas. M., Univ. of Md., 1881	Charlotte
Strickland, M. C., Jeff. Med. Coll., 1889	Bliss
Thacker, J. H., Med.-Chirurg., Pa., 1889	Reidsville
Tayloe, J. W., Univ. of Va., 1888	Union
Vines, W. W., Univ. of Md., 1889	Tarboro
Ward, J. M., Bellevue Med. Coll., 1889	Moyton
White, John W., Jeff. Med. Coll., 1889	Wilkesboro
White, Geo. I., Univ. of Va., 1888	Jefferson
Whitehead, Richard H., Univ. of Va., 1888	Charlottesville, Va.
Wynn, A. L., Univ. of Md., 1889	Ridgeway

*Made highest grade.—N. C. Medical Journal, Vol. xxxiii, p. 50.

29TH SESSION—May, 1890, Oxford.

(Members present, Drs. W. R. Wood, A. W. Knox, P. L. Murphy, F. Duffy, J. A. Reagan, and W. J. H. Bellamy.)

Name and College of Graduation. *Address at Time Licensed.*

Alston, M. W. (col.), Leonard Med. Coll., 1890.....Louisburg
Ambler, Chase P., West. Reserve Univ., O., 1889.....Asheville
Blaylock, N. M., Coll. P. & S., Balto., 1890.....Boucks
Blue, Kenneth A., Univ. of Md., 1890.....Hasty
Bynum, James T., Coll. P. & S., Balto., 1890.....Germantown
Bradsher, Jesse C., Univ. of N. Y., 1887.....Olive Hill
Bowling, Edward H., 1st course Coll. P. & S., Balto., 1889.....Luster
Caldwell, D. (col.), Leonard Med. Col., 1890.....Chapel Hill
Consts, Daniel W., Tulane Univ. of La., 1890.....Reidsville
Flynt, S. S., Coll. P. & S., Balto., 1889.....Rural Hall
Gaddy, John A., Univ. of Md., 1890.....Cedar Hill
Hargrove, Chas. B., Univ. of Md., 1890.....Tarboro
Headen, Wm. E., 1st course Univ. of Md., 1889.....Pittsboro
Hinman, Richard E., N. Y. Homeop. Med. Coll., 1888.....Charlotte
Hubbard, Chas. E., Jeff. Med. Coll., 1888.....Wilkesboro
Horah, Alston D., Univ. of Va., 1889.....Salisbury
Hughler, G. W., Jr., Jeff. Med. Coll., 1885.....Washington
Jenkins, C. L., Univ. of N. Y., 1890.....Tarboro
Jewett, Robert D., Univ. of Va., 1888.....Wilmington
Jerome, James R., Univ. of Md., 1890.....Mint Hill
Mack, Alexander, So. Car. Med. Coll., 1890.....Red Springs
Mayo, Wm. R., Univ. of Md., 1890.....Bethel
Mewborn, Geo. T., Univ. of Md., 1889.....Snow Hill
Melcher, Paul N. (col.), Leonard Med. Coll., 1890.....Concord
McAllister, Wm., Coll. P. & S., Balto., 1890.....Milledgeville
Nichols, Rhodes E., Med. Coll. of Va., 1890.....Dayton
Norfleet, Leon E., Coll. P. & S., N. Y., 1889.....Tarboro
Nelson, Robt. J., Louisville Med. Coll., 1890.....Bethel
Peacock, John J., Univ. of Md., 1890.....Saratoga
*Primrose, Robert S., Bellevue Med. Coll., 1890.....New Bern
Reid, Robert M., Univ. of N. Y., 1890.....Steel Creek
Ross, Robt. D., Univ. of N. Y., 1890.....Charlotte
Sanderford, John F., Coll. P. & S., Balto., 1890.....Creedmore
Sawyer, L. L., Univ. of Md., 1890.....Elizabeth City
Shamburger, John B., Univ. of Md., 1890.....Asbury
Spicer, John, Bellevue Med. Coll., 1889.....Goldsboro
Sexton, C. H., Univ. of Md., 1890.....Raleigh
Strickland, John T., Univ. of Md., 1890.....Castalia
Teague, Rufus J., Univ. of Md., 1890.....Alpha
Vann, Luther L., Jeff. Med. Coll., 1890.....Winston
Watts, J. B., Coll. P. & S., Balto., 1890.....Taylorsville
Watson, Duncan I., Univ. of Louisville, Ky., 1890.....Southport

*Made highest grade.—N. C. Medical Journal, Vol. xxxiii, p. 51.

Williamson, James C., Univ. of Md., 1890.....
Windsor, Wm. S., Univ. of Md., 1890.....Yadkin County
Whitley, Daniel P., Univ. of Md., 1889.....Big Lick

30TH SESSION—May, 1891, Asheville.

(Members present, Drs. W. H. Whitehead, Geo. W. Long, R. S. Young, R. L. Payne, Jr., Geo. W. Purefoy, Geo. G. Thomas and L. J. Picot.)

Name and College of Graduation. *Address at Time Licensed.*

Atkinson, W. H., Georgetown Univ., D. C.....Washington, D. C.
Bryant, R. H. (col.), Leonard Med. Coll.....Asheville
Bryan, J. J., Univ. of Md.....Battleboro
*Bellamy, Russell, 1st course Univ. of N. Y.....Wilmington
Burleyson, L. N., Univ. of Md.....Flows
Browning, R. Ray, Univ. of Md.....Littleton
Carlton, J. F., Univ. of N. Y.....Statesville
Campbell, A., Univ. of Md.....Snow Hill
Corrilver, C. W., Jeff. Med. Coll.....China Grove
Cheesborough, Thos. Patton, Univ. of N. Y.....Asheville
Davis, J. J., Univ. of Md.....Woodville
Fitch, W. E., Univ. of N. Y.....McRay
Foil, M. A., Jeff. Med. Coll., 1891.....Mt. Pleasant
Foster, G. A., Balto. Med. Coll.....Oakdale
Gouger, Geo. J., 2d course Univ. of Md.....Mt. Mourne
Gilmer, C. S., Univ. of N. Y.....Greensboro
Gibbon, John H., Jeff. Med. Coll.....Charlotte
Goodman, E. G., Univ. of Md.....El Paso
Gordon, James R., Univ. of N. Y.....Friendship
Hackler, G. M., Univ. of Md.....Mars Hill
Herman, F. L., nongraduate 1st course.....Conover's
Hill, W. J., Univ. of Md.....Statesville
Houck, Albert F., P. & S., Balto.....Lenoir
High, L. F., P. & S., Balto.....Thomas
Jones, C. D., Vanderbilt University.....Lewisville
Jordan, G. E., P. & S., Balto.....Altamaha
Jordan, Chas. S., Univ. of N. Y.....Asheville
Julian, Chas. A., Louisville Med. Coll.....Thomasville
Lefree, Robt. F. L., Univ. of Md.....Mt. Pleasant
Matherson, R. C., P. & S., Balto.....Taylorsville
Marshall, John S., Miami Med. Coll.....Asheville
Millender, M. C., Univ. of Va., 1887.....Pigeon River
Misseldine, O. S., So. Car. Med. Coll.....Tryon
Montgomery, John C., Univ. of N. Y.....Concord
Moore, N. G.....Huntersville
Matthews, Thos. A., Univ. of Md.....Battleboro
Martin, W. J., Univ. of Va.....Davidson
McBrayer, Lewis B., Louisville Med. Coll.....Asheville

* Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
Reeves, Everett, P. & S., Balto.	Dresden
Reid, W. R., Univ. of N. Y.	Griffith
Reid, T. N., Univ. of N. Y.	Griffith
Register, F. N., nongraduate	Keyser
Sane, John W., Louisville Med. Coll	Gastonia
Sloan, J. M., Louisville Med. Coll	Charlotte
Steele, W. C., Univ. of Md.	Croft
Spencer, Wm. O., Jeff. Med. Coll	Mocksville
Thompson, Robert, nongraduate P. & S., Balto	Sparta
Wakefield, Wm. H., Hosp. Coll. Med., Ky	Greensboro
Walker, Chas. E., Univ. of Md.	Huntersville
Wheeler, J. R., P. & S., Balto.	Spring Hope

31ST SESSION—May, 1892, Wilmington.

(Members present, Drs. W. H. Whitehead, Geo. G. Thomas, R. L. Payne, Jr., Geo. W. Long, R. S. Young, G. W. Purefoy and L. J. Picot.)

Adams, Claude A., Coll. P. & S., Balto., 1892	Cary
Ashworth, W. C., Coll. P. & S., Balto., 1892	Asheboro
Baird, Harry L., Vanderbilt Univ.	Asheville
Ballou, Wm. R., Bellevue Med. Coll.	Asheville
Boaz, T. A., P. & S., Balto., 1892	Price
*Buchanan, E. J., Univ. of Md., 1892	Salisbury
Bowen, Wm., McGill University	Knoxville, Tenn.
Blount, J. G., Bellevue Med. Coll., 1892	Washington
Bennett, John H., Univ. of N. Y., 1892	Wadesboro
Bullock, W. B., Bellevue Med. Coll.	Franklinton
Bynum, John, Univ. of N. Y., 1892	Winston
Crowell, L. A., Balto. Med. Coll.	Lincolnton
Crowell, A. J., nongrad. Univ. of Md.	Cabarrus Store
Caviness, R. L., Balto. Univ.	Coleridge
Costen, J. W., P. & S., Balto., 1892	Sunbury
Dellenger, J. E. (col.), Leonard Med. Coll.	Lowesville
Folger, W. C., Hosp. Coll. Med., Ky.	Dodson
Gattis, M. E., P. & S., Balto	Raleigh
Griggs, J. B., Univ. of Md., 1892	Elizabeth City
Hauser, N. B. (col.), Leonard Med. Coll.	Charlotte
Harris, A. H., nongrad. Med.-Chi., Phila., 1892	Wilmington
Hoover, H. R., Balto. Med. Coll.	Elm City
Jones, J. W. (col.), Leonard Med. Coll	Warrenton
Jones, C. M., Univ. of Md., 1892	Tarboro
Koontz, A. J., Coll. P. & S., Balto., 1887	Roaring River
Long, Henry F., Balto. Med. Coll., 1891	Statesville
Martin, S. L., Balto. Med. Coll.	Leaksville
McGilvra, S. C., Univ. of Va., 1890	Asheville
Oliveros, C. J., Univ. of Md., 1889	Asheville

*Made highest grade.

Name and College of Graduation. *Address at Time Licensed.*

Perkins, S. L., Balto. Med. Coll., 1891.....Solitude
Pennington, S. E., Coll. P. & S., Balto., 1891.....Sturgills
Rodman, John C., Bellevue Med. Coll., 1892.....Washington
Roberts, Frank, Jeff. Med. Coll., 1892.....Marshall
Rieves, J. T., Louisville Med. Coll., 1891.....Julian
Rainey, E. A., Ky. School Med.....Germantown
Roberson, L. V., Jeff. Med. Coll., 1891.....Weaverville
Stancill, R. H., Jr., Univ. of Md.....Margarettsville
Stevens, M. L., Balto. Med. Coll., 1891.....Enochsville
Summers, Chas. L., Univ. of Md., 1887.....Winston
Smith, R. W., Univ. of Md., 1887.....Hertford
Tayloe, Joshua, Bellevue Med. Coll.....Washington
Thomas, H. J., Rush Med. Coll.....Winston
Twitty, John C., Balto. Med. Coll., 1892.....Rutherfordton
Williams, Harry S., Medico-Chirurg., Pa.....Asheville
Wright, J. Thomas, Coll. P. & S., Balto., 1892.....Salisbury

32D SESSION—May, 1893, Raleigh.

(Members present, Drs. W. H. Whitehead, L. J. Picot, Geo. G. Thomas, R. S. Young, Geo. W. Long, H. B. Weaver and J. M. Baker.)

Abel, J. F., Balto. Univ.....Canton
Anderson, C. A., nongraduate P. & S., Balto.....Stainback
Arvie, G. F., Ky. School Med.....Ritchie's Mills
Averitt, K. G., Balto. Med. Coll.....Steadman
Beckwith, W. G., P. & S., Balto.....New Hill
Bowen, W. D., P. & S., Balto.....Plymouth
Corbell, E. F., Univ. of Md.....Sunbury
Crumpler, E. L., Med. Coll. Va.....Hansoms, Va.
Dixon, Joseph, nongrad. Med. Coll. of Va.....Fountain Hill
Dugoid, Joseph W., Univ. of Md.....New Bern
Faison, W. F., Univ. of Va.....Fayetteville
Faucette, T. S., Balto. Med. Coll.....Burlington
Griffin, C. F., P. & S., Balto.....Woodland
Harper, Chas. T., nongrad. N. C. Med. Coll.....Wilmington
Hathcock, T. A., Univ. of Md.....Norwood
Hill, W. Lee, P. & S., Balto.....Walnut Cove
*Holloway, R. L., Med. Coll. of Va.....Fish Dam
Ivie, Geo. N., Balto. Med. Coll.....Statesville
Kernodle, J. L., Coll. P. & S., Balto.....Elon College
Laughinghouse, Chas. J. O'H., Univ. of Pa.....Greenville
Long, LeRoy, Louisville Med. Coll.....Lowesville
Morris, Jos. A., Vanderbilt Univ.....Wilton
Moore, W. B., Balto. Med. Coll.....Francisco
Moore, W. J., Coll. P. & S., Balto.....Sandy Ridge
Mosely, Chas. W., Coll. P. & S., Balto.....Lewisville

*Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
McKenzie, W. W., Jeff. Med. Coll.	Salisbury
McNairy, C. B., P. & S., Balto.	Lomont
Norment, W. B., Univ. of Md.	Lumberton
Norment, T. A., nongrad. N. C. Med. Coll.	Lumberton
Phillips, C. H., Balto. Univ.	Fuller's
Pope, H. T., nongrad. N. C. Med. Coll.	Lumberton
Rheim, J. F., Bellevue Med. Coll.	New Bern
Riddick, Thos. M., P. & S., Balto.	Elizabeth City
Russell, Frank H., Univ. of Md.	Wilmington
Sapp, L. L., Jeff. Med. Coll.	Kernersville
Smith, G. A., Louisville Med. Coll.	Siler City
Street, M. E., P. & S., Balto.	Fairhaven
Stevenson, F. F., Louisville Med. Coll.	Statesville
Ward, N. G., Jeff. Med. Coll.	Belvidere
Whitehead, F. W., Coll. P. & S., Balto.	Scotland Neck
Whisnant, A. M., P. & S., Balto.	Shelby
Walton, C. B., P. & S., Balto.	Raleigh
Wright, S. P. (col.), Leonard Med. Coll.	Elizabethton
Winley, C. T., P. & S., Balto.	Yeatesville
Woodell, B. C., Balto. Med. Coll.	Scottsville
Williams, R. J., Jeff. Med. Coll.	Bannerman
Wyche, Chas. T., P. & S., Balto.	Oxford

32D SESSION (Adjourned)—August, 1893, Wrightsville.

Ashworth, B. L., Coll. P. & S., Balto.	Fairview
Dees, W. A., Univ. of Ga.	Monroe
Doughton, J. L., Coll. P. & S., Balto.	Sparta
Hill, D. J., Coll. P. & S., Balto.	Germantown
Jones, W. J., Jr., Univ. of N. Y.	Goldsboro
Jackson, C. C., Coll. P. & S., Balto.	Plymouth
Lassiter, W. L. (col.), Howard Univ.	Seaboard
Mease, J. Herbert, Vanderbilt Univ.	Canton
McCracken, J. F., Coll. P. & S., Balto.	Guilford College
McCandless, W. L., Univ. of N. Y.	Danbury
McGougan, J. V., Univ. of Md.	Lumber Bridge
Rowland, D. S., Balto. Med. Coll.	Henderson
Smith, L. C., Balto. Med. Coll.	Polkton
Swett, W. P., Univ. of Vermont	Southern Pines
Warren, Wm. E., nongrad. Univ. of N. Y.	Greenville
Wharton, L. D., Tulane Univ. of La.	Greensboro

33D SESSION—May, 1894, Greensboro.

(Members of Board present: Drs. W. H. Whitehead, L. J. Picot, R. S. Young, J. M. Baker, H. B. Weaver and Geo. W. Long.)

Abernethy, H. N., Louisville Med. Coll., 1894	Mariposa
Alexander, J. R., Univ. of Md., 1894	Croft

Name and College of Graduation. *Address at Time Licensed.*

Alston, J. H. (col.), Leonard Med. Coll., 1894.....Wilmington
Bennett, Jos. H., Univ. of Md., 1894.....Wadesboro
Brown, J. S., Northwest Univ., Ill., 1893.....Bear Poplar
Bowman, H. P., Univ. of Tenn.....Liberty
Brown, L. H. (col. female), Woman's Med. Coll., Pa., 1894, Wilmington
Brantley, C. H., Coll. P. & S., Balto, 1887.....Frick
Bryan, J. W. (col.), Leonard Med. Coll., 1894.....Tarboro
Clark, F. M., Coll. P. & S., Balto.....Beaufort
Coggeshall, J. A., Bellevue Med. Coll., 1879.....Oxford
Davis, Francis M., Vanderbilt Univ., 1894.....Iron Duff
Evans, W. E., Med. Coll. of Va., 1894.....Carthage
Gill, James N., Vanderbilt Univ.....Weaverville
Greenwood, B. H., Balto. Med. Coll., 1893.....Barnardsville
Gore, Anna M. (female), Woman's Med. Coll., N. Y. Inf.....Greensboro
Hays, Benj. K., Univ. Coll. Med., Va., 1894.....Oxford
Henderson, S. McD., Univ. of Md.....Croft
Jefferson, E. R. (col.), Leonard Med. Coll., 1894.....Raleigh
Jones, Clara E. (female), Woman's Med. Coll., Pa., 1894....Goldsboro
Kornegay, J. W., P. & S., Balto., 1893.....Mt. Olive
Kirkpatrick, Wm. L., Vanderbilt Univ., 1894.....Crabtree
Ledbetter, J. M., Vanderbilt Univ., 1894.....Rockingham
Linn, T. E., Pulte Med. Coll. (Homeop.), 1888.....Asheville
Miller, J. T., Univ. of Va., 1892.....Hot Springs
Menzies, H. C., N. C. Med. Coll., 1894.....Hickory
Mott, S. W., N. C., Med. Coll., 1894.....Davidson
McGeachy, R. S., Bellevue Med. Coll., 1894.....Fayetteville
Norvell, L. A., Univ. of Md., 1894.....Coleraine
Palmer, J. R., Atlanta Med. Coll., 1894.....Macon
Pickett, John A., Univ. of Tenn., 1894.....Liberty
Reid, Geo. P., Univ. Coll. Med., Va.....Old Fort
*Royster, Hubert Ashley, Univ. of Pa., 1894.....Raleigh
Sumner, W. J., Univ. of Tenn., 1893.....Buffalo Ford
Smoot, J. E., Balto. Med. Coll., 1893.....Omega
Thrash, Geo., Chattanooga Med. Coll., 1892.....Asheville
Tennent, Gaillard S., N. C. Med. Coll., 1894.....Asheville
Thames, John, Louisville Med. Coll., 1894.....Greensboro
Turlington, W. T., P. & S., Balto., 1894.....Benson
Utley, H. G., Univ. of Md., 1894.....Raleigh
Woodcock, S. J., Hosp. Coll. Med., Ky.....Asheville
Wooten, W. H., N. C. Med. Coll., 1894.....Davidson
Young, W. D., P. & S., Balto., 1889.....East Durham

33D SESSION (Adjourned)—July, 1894, Morehead City.

Arthur, T. H., Coll. P. & S., Balto., 1894.....Harrell's Store
Atkins, G. T., N. C. Med. Coll., 1894.....Thomasville

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* Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
Crocker, S. H., Ky. School Med., 1893	Garner
Hord, J. G., Univ. of Louisville, 1891	Kings Mountain
McCoy, E. M., N. C. Med. Coll., 1894	Bristow
Price, J. H., Coll. P. & S., Balto., 1894	Price's Mills
*Smithwick, J. W. P., Univ. of Md., 1894	Merry Hill
Robb, Isaac, Pulte Med. Coll. (Homeop.)	Asheville
Woodcock, John H., Hosp. Coll. Med., Ky	Asheville

34TH SESSION—May, 1895, Goldsboro.

(Members present: Drs. W. H. Whitehead, L. J. Picot, J. M. Hays, J. M. Baker, H. B. Weaver, Geo. W. Long, and T. S. Burbank.)

Alston, J. H., Vanderbilt Univ., 1894	Richmond, Va.
Aydlett, H. T., Univ. of Va., 1894	Elizabeth City
Anderson, Jasper N., Univ. of Md., 1895	Albemarle
Brevard, E. M., Univ. of Md	Charlotte
Blair, M. P., Med. Coll. of Va., 1895	Wadesboro
Brooks, E. H., Balto. Med. Coll., 1894	Monroeton
Bowen, M. D. (col.), Leonard Med. Coll., 1895	Clarkton
Bullock, J. L. (col.), Meharry Med. Coll., 1895	Greensboro
Cheatham, Goode, N. C. Med. Coll., 1895	Henderson
Crowell, S. M., Univ. of Md., 1895	Mint Hill
Crowell, W. H., Univ. of Md., 1895	Portsmouth
*Cohen, Lee, Univ. of Md., 1895	New Bern
Crim, F. D., Coll. P. & S., N. Y., 1881	Hot Springs
Daniel, N. C., N. C. Med. Coll., 1895	Satterthwaite
Dickinson, E. T., Med. Coll. of Va	Fremont
Eller, A. J., Coll. P. & S., Balto., 1893	Reedy Branch
Frazier, L. G., Univ. of Md., 1895	Henderson
Foutz, J. H., Vanderbilt Univ., 1895	Franklin
Gibson, T. C., Univ. of Georgetown, D. C., 1893	Winton
Gibbs, N. M., nongrad. N. C. Med. Coll	Fairfield
Grady, Earl, Univ. of Md., 1894	Fairfield
Goode, T. V., Ky. School of Med	Cherryville
Hay, W. S., Univ. of Ga., 1890	Clover, S. C.
Hamrick, J. C., P. & S., Balto., 1895	Henrietta
Halsey, Benj. F., Vanderbilt Univ., 1893	Roper
Holmes, F. H., Univ. of Md., 1895	Clinton
Hood, G. A., P. & S., Balto., 1895	Newton Grove
Jones, W. S., nongraduate N. C. Med. Coll	Goldsboro
Johnson, D. J., Univ. of Tenn., 1895	Fork Creek
Klebs, Edwin, University of Berlin, 1857	Asheville
Kenan, O. H., Coll. P. & S., Balto., 1894	Kenansville
Minor, Chas. L., Univ. of Va., 1888	Asheville
Morehead, R. P., P. & S., Balto., 1895	Lasker
McCoy, C. E., Vanderbilt Univ., 1895	Franklin

*Made highest grade.

Name and College of Graduation. *Address at Time Licensed.*

Nelon, M. Olivia (female), Woman's Med. Coll., O.....Asheville
Pressly, Geo. W., Jeff. Med. Coll., 1892.....Charlotte
Potts, F. L., nongrad. Univ. of Ga.....Washington
Parrott, James M., Tulane Univ. of La.....Kinston
Reitzel, J. R., Univ. of Tenn., 1892.....Pineville
Reynolds, Carl V., Univ. of N. Y., 1895.....Asheville
Russell, E. Reid, Univ. of Md., 1895.....Rockingham
Rodwell, J. W., Coll. P. & S., Balto.....Macon
Siler, F. L., nongrad. Vanderbilt Univ.....Dillsboro
Stamey, E. L., Atlanta Med. Coll., 1895.....Morehead
Shaw, W. G., P. & S., Balto., 1892.....Forteol
Sprnill, J. L., Univ. of Md., 1895.....Columbia
Thompson, A. F., Med. Coll. Indiana, 1895.....Wadeville
Thompson, N. A., nongrad. N. C. Med. Coll.....Lumberton
Turlington, R. S., Med. Coll. of Va., 1895.....Bennettsville, S. C.
Walker, T. C., Med. Coll. of Va.....Randleman
Warren, S. L. (col.), Leonard Med. Coll., 1895.....Durham
Whittington, W. W., Louisville Med. Coll., 1895.....Asheville
Williams, J. V., Univ. of Md., 1889.....Evaline

34TH SESSION (Adjourned)—August, 1895, Wrightsville.

Bernhardt, C. H., Jeff. Med. Coll., 1895.....Mt. Pleasant
Costen, H. W., Univ. of Va., 1895.....Fairfield
Fuller, W. T. (col.), Leonard Med. Coll., 1895.....Reidsville
*Graham, B. R., Univ. of Va., 1895.....Wallace
Hartsell, F. E., Balto. Med. Coll., 1895.....Concord
Hilliard, Walter L., Jeff. Med. Coll., 1895.....Asheville
Holt, W. P., Jeff. Med. Coll., 1895.....Willardsville
Millard, J. P., Med. Coll. of S. C., 1895.....Asheville
Mann. S. M., P. & S., Balto, 1895.....Manteo
*Moye, E. A., Univ. of Va., 1895.....Greenville
McCampbell, John, Balto. Med. Coll., 1894.....Morganton
Sawyer, C. J., P. & S., Balto., 1895.....Belle Cross
Sevier, Daniel E., Jeff. Med. Coll., 1895.....Asheville
Sevier, Joseph T., Jeff. Med. Coll., 1895.....Asheville

35TH SESSION—May, 1896, Winston.

(Members of Board present: Drs. W. H. Whitehead, L. J. Picot, H. B. Weaver, J. M. Hays, and Geo. W. Long.)

Aaron, L. P., nongrad. Univ. of Md.....Mt. Olive
Ardrey, L. L., Bellevue Med. Coll.....Charlotte
Bennett, E. M., Vanderbilt University.....Palm
Blackburn, T. C., Balto. Med. Coll.....Boone
Brown, Ed. M., Bellevue Med. Coll.....Washington
Burt, S. P., Coll. P. & S., Balto.....Centerville

* Made highest grade—a tie.

Name and College of Graduation.	*Address at Time Licensed.*
Byerly, A. B., Univ. Coll. Med., Va	Yadkin College
Browning, E. S., nongrad. N. C. Med. Coll	Pleasant Grove
Crocker, W. D., Louisville Med. Coll	Lucama
Davis, A. P., Ky. School of Med	Daisy
Fearing, Isaiah, Coll. P. & S., Balto	Elizabeth City
Griffin, E. M., nongrad. Univ. of Va	Winston
Griggs, W. T., Univ. of Va	Harbinger
Gilbert, J. C., nongrad. Med. Coll. of Va	Hope Mills
Garrison, D. A., Louisville Med. Coll	Bessemer City
Glenn, Eugene B., Jeff. Med. Coll	Asheville
Heard, E. N., Miami Med. Coll., O	Asheville
Hutchins, E. M., N. C. Med. Coll	Capp's Mills
Hoyle, Hughes B., N. C. Med. Coll	Jonesboro
Horton, W. P., Balto. Med. Coll	North Wilkesboro
Horton, W. C., Coll. P. & S., Balto	Wakefield
Hemphill, W. E., Balto. Med. Coll	Archer's
Harzlip, J. H., Coll. P. & S., Balto	Salem Chapel
Hauser, B. B., nongrad. P. & S., Balto	Yadkinville
Hamlen, H. C., Univ. Coll. Med., Va	Winston
Harris, Joy (female), Woman's Med. Coll., Balto	Summerfield
Koonce, S. E., Coll. P. & S., Balto	Newton
Kirby, Guy S., nongrad. N. C. Med. Coll	Lenoir
Leister, E. W., Med. Coll. of Va	Elizabeth City
Leak, J. J., nongrad. Univ. of Md	Francisco
Leister, J. L., Med. Coll. of Va	Elizabeth City
Lattimore, E. B., nongrad. N. C. Med. Coll	Shelby
Medford, Samuel B., University of Nashville	Clyde
Morris, E. R., Louisville Med. Coll	Asheville
Moser, D. M., nongrad. N. C. Med. Coll	Conovers
Massey, John S. (col.), Leonard Med. Coll	Monroe
Mopp, Wm. R. (col.), Leonard Med. Coll	Raleigh
Matthews, J. B., Med. Coll. of Va	Durham
Mitchell, W., Univ. of Md., 1895	Lewiston
*Mangum, Chas. S., Jeff. Med. Coll	Chapel Hill
McAnally, W. J., nongrad. Univ. Med. Coll., Va	Madison
McCracken, C. M., nongrad. N. C. Med. Coll	Clyde
McLeod, A. H., Balto. Med. Coll	Keyser
McLaughlin, C. S., Univ. of Md	Newels
Norman, Geo. W., Balto. Med. Coll	Reidsville
Osborne, John M., Jeff. Med. Coll	Asheville
Purlear, C. J., Vanderbilt Univ	Boone
Pearson, Edward J., Jeff. Med. Coll	Asheville
Royster, S. S., Tenn. Med. Coll	Mooresboro
Ricks, S. E., Med. Coll. of Va	Pantego
Swann, J. F., Coll. P. & S., Balto	Cool Spring

* Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
Shepherd, J. M., Balto. Med. Coll	Campbell
Tate, Chas. S., Balto. Med. Coll	Ramseur
Upchurch, H. C., Coll. P. & S., N. Y.	Raleigh
Williams, Geo. W. (col.), Leonard Med. Coll.	Raleigh
Wilson, F. G., Univ. of Md.	Gastonia
Watkins, Thos. I., nongrad. P. & S., Balto.	Walnut Cove
Withers, Banks, Univ. of Md.	Davidson
Young, James, nongrad. N. C. Med. Coll.	Mooresville
Young, J. J., nongrad. P. & S., Balto.	Smithfield

35TH SESSION (Adjourned)—August, 1896, Morehead City.

Chapman, H. J., Univ. of Pa., 1895	Asheville
Davis, Geo., Ky. School of Med., 1894	Beaufort
Fort, James E. (col.), Leonard Med. Coll., 1896	Eureka
*Lee, R. E., Univ. of Md., 1896	Clinton
Lloyd, J. M. (col.), Leonard Med. Coll., 1896	Elizabethton
Monk, H. G., Med. Coll. of Va., 1896	Newton Grove
Tayloe, Armistead K., nongrad. Univ. Med. Coll., Va.	Washington

36TH SESSION—June, 1897, Morehead City.

(Members of Board present: Drs. J. M. Baker, H. B. Weaver, T. S. Burbank, D. T. Tayloe, Thos. Eli Anderson, R. H. Whitehead, and K. P. Battle, Jr.)

Bell, A. E., Univ. of Md.	Charlotte
Betts, Henry T., Univ. of Md.	Baltimore, Md.
Bitting, B. T., Balto. Med. Coll.	Mizpah
Bonner, H. M., Med. Coll. of Va.	Aurora
Bethune, A. C., Univ. of Va.	Aberdeen
Birting, R. Clinton, nongraduate	Wilmington
Brown, G. A., Univ. Coll. of Med. Va.	Bear Poplar
Brooks, Jos. E., Univ. Coll. Med., Va.	Siler City
Barrett, W. W., Ky. School of Med.	Monroe
Campbell, Reuben A., nongraduate	Statesville
David, J. E., Univ. of Pa.	Asheville
Davis, J. Cæsar, nongrad. N. C. Med. Coll.	Iron Duff
Dawson, W. W., Univ. of Md.	Grifton
Everett, A. C., Univ. of Md.	Louisburg
Flippen, R. E. L., Balto. Med. Coll.	Pilot Mountain
Glenn, L. N., Univ. of Md.	Crowder's Creek
Garren, G. A. (col.), Leonard Med. Coll.	Greensboro
Goodman, A. B., N. C. Med. Coll.	Sanders
Harrell, S. N., Univ. of Md.	Coakley
Hiden, James H., Va. Med. Coll.	Richmond, Va.
Hutton, Paul C., Columbia College	Goldsboro
Hill, Wm. I., Univ. of Md.	Morgan's Mills

*Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
Hunter, B. R., Louisville Med. Coll.	Kings Mountain
Hart, John Ellis, Univ. of Md.	Monroe
Hood, J. J. (col.), Leonard Med. Coll.	Fayetteville
Holding, S. P., Bellevue Med. Coll.	Wake Forest
Hayes, L. O., Univ. Coll. Med., Va.	Lacuna
John, Peter, Univ. of Md.	Laurinburg
Justice, M. L., N. C. Med. Coll.	Peru
Judd, James M., Balto. Med. Coll.	Enno
Jones, Clarence P., Univ. Coll. Med., Va.	Rockingham
*Jones, R. Duval, Univ. of Md.	New Bern
Koonce, F. D., Jr.	Richlands
Kennedy, Geo. W.	Waycross
Kinsman, Henry F., Univ. of Vermont, 1894	Hamlet
Lee, L. V., Atlanta Med. Coll.	Lattimore
Lippett, W. H., Univ. of Md.	Pittsboro
Love, Stonewall J., Atlanta Med. Coll.	Long's Store
Matthews, J. O., Univ. Coll. Med., Va.	Taylor's Bridge
Morrell, David S., Balto. Med. Coll.	Farmville
McGeachy, James S., N. C. Med. Coll.	N. C. Med. Coll.
McGinnis, R. H., Univ. Coll. Med., Va.	Baltimore, Md.
Northrup, Theodore L., Univ. of Md.	Laurinburg
Patterson, R. Delmore, Balto. Med. Coll.	Liberty
Person, J. B., Jr., Med. Coll. of Va.	Fremont
Powell, W. V., Univ. of Va.	Asheville
Pearson, Chas. L., Univ. of Md.	Asheville
Pierce, Sterling B., Bellevue Med. Coll.	Weldon
Paris, O. J., Balto. Med. Coll.	Gath
Roberson, Chas., Long Island Med. Coll.	Chapel Hill
Spicer, William, nongraduate	Goldsboro
Savage, R. L., Univ. of Md.	Hobgood
Sawyer, James, Bellevue Med. Coll.	Asheville
Smithwick, James E., Univ. of Md.	Janesville
Wallis, W. J., Coll. P. & S., Balto.	Brevard
Weaver, W. J., nongraduate	Asheville
Wallace, J. Brown, Univ. of Md.	Sardis
Williams, Geo. D., Coll. P. & S., Balto.	Gatesville
Wharton, C. R., Med. Coll. of Va.	Ruffin
Webb, W. P., S. C. Med. Coll.	Rockingham
Wyche, Allen A. (col.), Leonard Med. Coll.	Henderson
Whitley, A. D. H., Univ. of Md.	Zoar
Zachary, R. E., nongraduate	Chapel Hill

37TH SESSION—May, 1898, Charlotte.

(Members Board present: Drs. J. M. Baker, H. B. Weaver, T. E. Anderson, D. T. Tayloe, K. P. Battle, Jr., and J. Howell Way.)

Boyette, E. C., Balto. Med. Coll., 1893	Mt. Holly

* Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
*Brooks, W. H., Balto. Med. Coll., 1889	Greensboro
Burrus, John T., Louisville Med. Coll., 1898	Rockford
Bynum, C. H. (col.), Leonard Med. Coll., 1896	Wilson
Campbell, J. I., nongraduate	Mint Hill
Caton, G. A., Med. Coll. Va., 1898	Grantsboro
Darbonier, F. L., Long Island Med. Coll., 1897	Asheville
Davidson, John E. S., Univ. of Md., 1894	Triangle
Duncan, G. F., nongraduate	Sparta
Denson, Eugene B., Univ. of Md., 1898	Raleigh
Everington, Geo. D., nongraduate	Louisburg
Flippen, R. D., Louisville Med. Coll., 1891	Pilot Mountain
Flippen, S. T., nongraduate	Siloam
Gilreath, F. H., Univ. of Nashville, 1898	Moravian Falls
Graves, W. H. (col.), Leonard Med. Coll., 1898	Reidsville
Hunter, J. B., Univ. of Louisville, Ky., 1898	Nimrod
Haller, O. L., Balto. Med. Coll., 1892	Mt. Sterling
Highsmith, Chas., Balto. Med. Coll., 1898	Parkersburg
Jones, Walter J., nongraduate	Outlaw's Bridge
Jenkins, R. E., Louisville Med. Coll., 1898	Belmont
Kerr, J. E., Univ. of Md., 1898	Pee Dee
Knight, W. P., Balto. Med. Coll., 1898	Oak Ridge
Long, Fred. Y., nongraduate	Catawba
Lord, Alonzo D., Coll. P. & S., Boston, 1897	Statesville
Lee, Plato H., Univ. of Nashville, 1894	Alexander
Malloy, S. A., Ky. School of Med., 1897	Reidsville
Moore, E., Ill. Med. Coll., 1897	Salisbury
Mast, J. R. (col.), Leonard Med. Coll., 1898	Wilmington
Moore, J. T., nongraduate	Farmington
Moore, J. Edgar, nongraduate	Canton
Mock, J. H., Med. Coll. Va., 1898	Thomasville
McCain, Wm. R., Univ. of Md., 1897	McCaina
McNeill, Martin, nongraduate	Red Springs
McPherson, J. W., Balto. Med. Coll., 1898	Liberty
McMillan, A. S. (col.), Leonard Med. Coll., 1898	St. Paul's
Palmer, B. H., Louisville Med. Coll., 1898	Shelby
Parker, James R., Balto. Med. Coll., 1898	Nunlola
Pendleton, A. S., Univ. of Penn., 1895	Roanoke Rapids
Pfohl, S. F., Univ. of Pa., 1894	Salem
Price, R. J., Med. Coll. of Va., 1898	Wilmington
Querry, W. L., nongraduate	Querry's
Rogers, W. A., Univ. of Nashville, 1898	Franklin
Rierson, R. L., Univ. of N. Y., 1887	Elk's
Ray, John B., Balto. Med. Coll., 1898	Leaksville
Schaub, O. P., Balto. Med. Coll., 1898	Culler
Spainhour, E. H., Balto. Med. Coll., 1898	Culler

*Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
Stephenson, C. B., Tulane Univ. of La.	Charlotte
Stevens, S. A., nongraduate	Monroe
Stewart, H. D., Univ. of Md., 1898	Monroe
Stringfield, Thomas, Vanderbilt Univ., 1898	Waynesville
Shaw, N. G., Louisville Med. Coll.	Harrell's Store
Stephens, W. F., nongraduate	Ashpole
Stewart, J. T., nongraduate	Red Shoals
Thomas, Herbert B., nongraduate	New Bern
Thompson, J. B., Coll. P. & S., Balto., 1898	Cliffdale
Troy, Thad. S., Med. Coll. of Va., 1898	Durham
VanBergen, Chas., Univ. Paris, France	Asheville
Whitley, C. C. (col.), Leonard Med. Coll., 1898	Wilmington
Woody, S. B., Vanderbilt Univ., 1892	Spring Creek
Williams, J. A., Univ. of Va.	Prospect Hill
Williams, J. D., Vanderbilt Univ., 1898	Lowesville
Young, J. W., Univ. of Md., 1898	Lexington

38TH SESSION—May, 1899, Asheville.

(Present the following members: Drs. D. T. Tayloe, T. E. Anderson, K. P. Battle, Jr., J. Howell Way, W. H. H. Cobb, Albert Anderson, and E. C. Register.)

Achorn, J. Warren, Med. Coll. of Maine and Bellevue	Boston, Mass.
Bass, H. H., Univ. Coll. Med., Va., 1899	Rocky Mount
Brooks, T. L., Univ. Coll. Med., Va., 1899	Black Creek
Boyd, D. A., Vanderbilt Univ., 1899	Plott
Banner, C. W., Univ. of Md., 1899	Mt. Airy
Case, Calvin M., St. Louis Med. Coll.	Asheville
Cason, H. M. S., Univ. of Md., 1897	Edenton
Calloway, A. W., Chicago Homeop. Med. Coll., 1895	Asheville
Cardwell, G. W. (col.), Leonard Med. Coll., 1899	Reidsville
Copple, T. M., nongrad. Univ. of Md.	Lexington
Covington, J. M., Medico-Chir., Phila., 1899	Rockingham
Davis, T. W., Med. Coll. of S. C., 1898	Louisburg
Duson, W. W., Tulane Univ. of La., 1892	Asheville
Drewry, F. D., Med. Coll. of Va., 1898	Garysburg
Drafts, A. B., Univ. of Va., 1896	Hendersonville
Fassett, B. W., Balto. Med. Coll., 1898	Cross Roads Church
Fox, T. I., Vanderbilt Univ., 1894	Franklinsville
Fox, D. L., Vanderbilt Univ., 1894	Workville
Felts, Robert L., Univ. of Md., 1898	Charlotte
Fountain, Wm., Univ. Coll. Med., Va., 1898	Tarboro
Griffin, D. W., Univ. Coll. Med., Va., 1899	Pippetoe
Gladmon, Edwin, National Univ., D. C.	Southern Pines
Hall, J. C., Univ. Coll. Med., Va., 1899	Star
Hays, G. W., nongrad. Ky. School of Med	Lancaster, Ky.
Heilig, H. G., Univ of Md., 1899	Salisbury

Name and College of Graduation. *Address at Time Licensed.*

Hunter, W. C., Medico-Chirurg., Phila., 1899.....Enfield
Heathman, J. D., nongrad. Univ. of Md.....Woodleaf
Hollingsworth, R. E., Univ. Coll. of Med., 1898.....Mount Airy
Houston, H. C., Univ. of Nashville, 1899.....Walkaps
Holt, R. D., Med. Coll. of Va., 1899.....Smithfield
Isley, Wm. P., Vanderbilt Univ., 1899.....Burlington
Joyner, T. O., Univ. Coll. Med., Va., 1899.....Seaboard
Joyner, C. C., Jeff. Med. Coll., 1899.....Greenville
Kirby, Geo. H., Long Island Hosp. Med. Coll., 1899.....Raleigh
Lamm, J. W., Univ. Coll. of Med., Va., 1899.....Siler City
*Love, Lionel H., Coll. P. & S., N. Y., 1898.....Wilmington
Leak, W. G., nongrad. N. C. Med. Coll.....Francisco
Lauderdale, W. C., Univ. of Pa., 1897.....Asheville
Manning, J. H., Long Island Med. Coll., 1897.....Wilmington
Maxwell, C. S., nongrad. Med. Coll of Va.....Mt. Olive
Meadows, W. J., Ala. Med. Coll., 1894.....McAdensville
Merrimon, Louise A. (female), nongrad. Laura Memorial Med. Col. Ohio .....Asheville
Miller, W. E., Coll. P. & S., Balto., 1898.....Burlington
Monk, H. L., Med. Coll. of Va., 1897.....Newton Grove
Moore, H. R., Atlanta Coll. P. & S., 1899.....Burlington
Mewborn, J. M., Georgetown Univ., 1898.....Powell's Point
McKethan, D. G., Univ. Coll. Med., Va., 1899.....Fayetteville
McRae, J. D., Univ. of Nashville, 1897.....Fayetteville
Nisbet, W. O., S. C. Med. Coll., 1899.....Waxhaw
Noble, J. E., Jeff. Med. Coll., 1899.....Greenville
Paquin, Paul, Missouri Med. Univ., 1887.....Asheville
Peeler, Jno. H., Univ. Coll. Med., Va., 1899.....Faith
Peavy, J. F., Med. Coll., Ala., 1888.....Asheville
Ray, O. L., Univ. Med. Coll., Va., 1899.....Bangor
Rakestraw, Chauncey, Ohio Med. Coll., 1894.....Charlotte
Roberson, R. M., Univ. Coll. Med., Va., 1899.....Pittsboro
Ross, Geo. H., Univ. of Tenn., 1899.....Oakdale
Rozier, R. G., Univ. of Md., 1899.....Rozier
Von Ruck, Silvio, Bellevue Med. Coll., 1899.....Asheville
Smith, W. H., nongrad. Balto. Med. Coll.....Nashville
Smith, Jas. A., nongrad. Univ. of N. C.....Raleigh
Smith, J. T., N. C. Med. Coll., 1898.....Westfield
Schell, S. W., Univ. Balto., 1899.....Lenoir
Shore, T. W., Univ. Coll. Med., 1898.....Boonville
Slate, J. S., nongrad. N. C. Med. Coll.....Mizpah
Smith, O. F., Univ. Coll. Med., Va., 1899.....Waycross
Steele, R. T. S., Univ. of Md., 1899.....Rockingham
Slate, J. W., nongrad. N. C. Med. Coll.....Quaker
Scott, Chas. L., Univ. of Md., 1898.....Mebane

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*Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
Tucker, H. McKee, Univ. of Md., 1899	Raleigh
Tyson, T. D., Univ. Coll. Med., Va., 1899	Covington
Van Poole, G. M., Univ. of Md	Craven
White, W. M., Atlanta Coll. P. & S., 1899	Statesville
Winston, A. R., Bellevue Med. Coll., 1899	Franklinton
Wise, John S., Ky. School of Med., 1890	Chester, S. C.
Whitehead, J. P., Univ. of Md., 1899	Rocky Mount
Wilson, Ida M. (female), Ohio Med. Coll., 1896	Charlotte
Wimberly, J. P., Jeff. Med. Coll., 1899	Rocky Mount
Wright, J. B., Univ. Coll. of Med., Va., 1899	Chassie
Widby, E. J., Balto Univ., 1897	Lenoir
Walker, L. A., Univ. Coll. of Med., 1898	Stony Creek
Ward, F. A., Med. Coll. of Va., 1898	Gliden
Yarborough, R. F., Columbian Univ., D. C., 1898	Louisburg
Thomson, J. R., Univ. Coll. Med., Va., 1899	Cally

39TH SESSION—May, 1900, Tarboro.

(Members of the board present: Drs. D. T. Tayloe, Thos. Eli Anderson, J. Howell Way, K. P. Battle, Jr., E. C. Register, Albert Anderson and W. H. H. Cobb.)

Brown, Geo. W., Ky. School Med., 1898	Covington
Brown, Edward, Balto. Med. Coll	Greensboro
*Borden, Sallie (female), Woman's Med. Coll., N. Y., 1899	Goldsboro
Bell, Gaston Graham, Univ. Coll. Med., Va., 1900	Elizabeth City
Ballard, S. E., Balto. Med. Coll., 1897	Saginaw
Buffaloe, J. S., Balto. Med. Coll., 1900	Garner's
Bynum, Wade H., Univ. Coll. Med., Va., 1900	Germanton
Bryson, Dan'l R., Univ. of Md., 1900	Bryson City
Cloninger, L. V., N. C. Med. Coll., 1900	Stanley
Cromartie, R. S., N. C. Med. Coll., 1900	Garland
*Dixon, E. D. (female), Woman's Med. Coll., N. Y., 1895	Raleigh
Dunn, Wm. L., Univ. of Mich., 1900	Asheville
Earl, Edgar H., Coll. P. & S., Ontario, 1886	Rochester, N. Y.
Edwards, Sam'l, Univ. of Md., 1897	Goldsboro
Evans, L. B., Univ. Med. Coll., Va., 1900	Idaho
Fauntleroy, J. W., Coll. P. & S., N. Y., 1896	Saluda
Fortune, A. F., Univ. Med. Coll., Va., 1900	Greensboro
Glenn, H. F., Coll. P. & S., Atlanta, 1900	Gastonia
Greene, J. C., Med. Coll., Va., 1900	Greenville
Hauser, Wm. H., N. C. Med. Coll., 1900	Shelby
Hines, C. H. (col.), Leonard Med. Coll., 1900	Smithfield
Henderson, B. H. (col.), Howard Univ., 1897	Fayetteville
Hunt, J. F., Univ. of Tenn., 1900	Fallston
Hoyt, A. C., Univ. of Md., 1900	Winston
Harrison, Edmund, Univ. Coll. Med., 1896	Greensboro

*Made highest grade.

Name and College of Graduation. *Address at Time Licensed.*

Jones, Lucy C. (female), Syra. Med. Coll., N. Y., 1898..New York, N. Y.
Kluttz, W. C., Univ. of Penn., 1899.....Salisbury
Moss, W. H., Univ. of Ga., 1892.....Charlotte
Mills, Chas. H. C., Univ. of Md., 1897.....Charlotte
Miller, Robt. B., Med. Coll., Va., 1898.....Richmond
Mitchell, W. F., Univ. of Md., 1899.....Shelby
Melvin, W. C., Univ. Coll. Med., Va., 1900.....Winnie
McPhail, L. D., Univ. of Md., 1900.....Clinton
McRae, Neill, Univ. Med. Coll., Va., 1900.....Fayetteville
Nixon, E. J., Univ. of Md., 1900.....Wilmington
Newman, W. A., Med. Coll., Va., 1876.....Salisbury
Powell, H. G., Coll. P. & S., Atlanta, 1900.....Fair Bluff
Pollock, Raymond, Jeff. Med. Coll., 1897.....Winston
Patrick, J. E., Univ. Med. Coll., Va., 1900.....Institute
Price, Geo. E., Univ. of Penn., 1898.....Sapphire
Pate, Geo. M., S. C. Med. Coll., 1900.....Gibson
Reid, W. E. (col.), Leonard Med. Coll., 1900.....Gatesville
Sikes, Geo. L., Univ. Med. Coll., 1900.....Clinton
Stokes, J. Ernest, Univ. of Md., 1892.....Salisbury
Shaffner, F. J., Jr., Univ. of Pa., 1899.....Winston
Stratford, Wm. Henry, Univ. Med. Coll., Va., 1900.....Greensboro
Thigpen, W. J., Jeff. Med. Coll., 1900.....Conetoe
Wessell, J. C., Univ. of Md., 1900.....Wilmington
Watkins, G. S., Univ. Med. Coll., 1900.....Cornwall
West, R. M., Med. Coll. of Va., 1900.....Salisbury
Worstell, Gaylord, Columbian Univ., D. C., 1899.....Cherokee
Witherspoon, B. J., Med. Coll. of S. C., 1894.....Charlotte
Watson, Leon, N. C. Med. Coll., 1900.....Broadway

40TH SESSION—May, 1901, Durham.

(Members of board present: Drs. E. C. Register, J. Howell Way, D. T. Tayloe, Thomas E. Anderson, Albert Anderson, T. S. McMullan, and Jno. C. Walton.)

Abernethy, Eric A., Univ. Med. Coll., Va., 1901.....Chapel Hill
Allen, Joseph A., Univ. Med. Coll., Va., 1901.....Poindexter
Ballenger, Edgar G., Univ. of Md., 1901.....Tryon City
Briggs, Henry H., Yale University, 1897.....Asheville
Benton, Geo. Ruffin, Med. Coll. of Va., 1901.....Wilson
Brawley, R. Vance, Univ. Med. Coll., Va., 1901.....Mooresville
Candler, Chas. Z., Coll. P. & S., Atlanta, 1901.....Dillsboro
Cotton, Clyde E., Univ. of Wooster, O., 1889.....Black Mountain
Davis, Hoagland C., N. C. Med. Coll., 1901.....Fayetteville
Drake, John H., Med. Coll. of Ala., 1891.....Asheville
Dixon, Wm. Henry, Med. Coll. of Va., 1901.....Edwards
Dicks, James F., Univ. Med. Coll., Va., 1901.....Walkerton

Name and College of Graduation.	*Address at Time Licensed.*
Edwards, Arthur J., Univ. of N. Y., 1901	Winston
Early, Wm. Wallace, Univ. of Pa., 1893	Aulander
Foscue, Jno. E., Univ. of Md., 1901	Pollocksville
Fearing, Zeno, Univ. Med. Coll., Va., 1901	Elizabeth City
Green, Thos. M., Univ. of Md., 1901	Wilmington
Ginn, Theo. L., Med. Coll. of Va., 1901	Goldsboro
Goley, Wm. R., Univ. Med. Coll., Va., 1901	East Durham
Garner, Robt. H., Univ. of Nashville, 1900	Lincolnton
Garland, David L., Univ. of Nashville, 1901	Rabun Gap, Ga.
*Graham, Wm. Alexander, Univ. of Pa., 1899	Durham
Hart, E. Roland, Univ. of Md., 1901	Tarboro
Holmes, Lawrence E., Univ. of Pa., 1897	Biltmore
Herring, Benj. S., Univ. of Mich., 1900	Wilson
Hargrave, Wm. F., Univ. of Md., 1901	Baltimore, Md.
Hollowdy, Oscar W., Med. Coll. of Va., 1901	Gorman
Honnett, J. H., Coll. P. & S., N. Y., 1900	Wilmington
Hargrove, Frank S. (col.), Leonard Med. Coll	Lexington
Hiatt, John T., Coll. P. & S., Atlanta, 1901	Ellerlie
Highsmith, Seavy, Univ. Coll. Med., Va., 1901	Parkersburg
Hooks, Ethelred, Med. Coll., Va., 1901	Fremont
Hunter, Henry Holmes, Med. of Coll. Va., 1900	Somerton
Hocutt, John Irving, Univ. Med. Coll., Va., 1900	Emmit
Hughes, Claude M., Atlanta Med. Coll., 1897	Cedar Grove
Jurney, Peter C., Med. Coll. of Va., 1901	Olin
Johnson, Robert W., Univ. of Tenn., 1900	Oakdale
Jones, Arthur L., Univ. Coll. Med., 1901	Silas Creek
Kapp, Henry H., Jeff. Med. Coll., 1901	Bethania
Kirk, Wm. Reddin, Central Univ. of Ky., 1890	Hendersonville
Kornegay, W. Emmett, Univ. of Md	Baltimore, Md.
Maxwell, Geo. M., N. C. Med. Coll., 1901	Davidson
Morse, Lucius B., Chicago Homeop. Med. Coll., 1895	Asheville
Moore, Tilon V., Balto. Med. Coll., 1901	Phœnix
Monroe, John P., Coll. P. & S., Balto., 1901	Sanford
Meadows, Elijah B., Univ. Med. Coll., Va., 1901	Oxford
McFayden, Paul R., Univ. Coll. Med., 1901	Clarkton
McBryde, M. Hugh, Univ. Med. Coll., Va., 1901	L. R. Academy
McKeethan, John A., N. C. Med. Coll., 1901	Fayetteville
McEachern, Ed. C., Univ. of Md., 1901	Wilmington
McGregor, Geo. W., Darmouth Med. Coll., 1878	Littleton, N. H.
Newby, Geo. E., Jeff. Med. Coll., 1900	Reading, Pa.
Orr, Peter B., Jeff. Med. Coll., 1901	Asheville
Peacock, Walter J., Tulane Univ. of La., 1901	Salisbury
Prioleau, W. H., Jr., Med. Coll. of S. C., 1893	Asheville
Pridgeon, Leonard C., Jeff. Med. Coll., 1901	Kinston
Parker, John R., Univ. Coll. of Med., 1901	Laws

*Made highest grade.

Name and College of Graduation. *Address at Time Licensed.*

Rogers, Francis O., Univ. of Md., 1901.....Concord
Rankin, Watson S., Univ. of Md., 1901.....Erskine
Rose, Augustus S., Univ. Med. Coll., Va., 1901.....Fayetteville
Staley, S. Walter, Med. Coll. of S. C., 1901.....Liberty
Shepherd, C. H. (col.), Leonard Med. Coll., 1901.....Raleigh
Speight, R. H. Jr., Univ. of Md., 1901.....Wrendale
Self, L. Lester, Univ. Med. Coll., Va., 1901.....Lincolnton
Skinner, L. C., Univ. of Md., 1901.....Greenville
Sherrill, Albert, Univ. Med. Coll., Va., 1901.....Lenoir
Tucker, John Hill, Jr., Univ. of Va., 1899.....Henderson
Taylor, W. L., Univ. of Va., 1900.....Stovall
Thompson, C. D., Univ. of Tenn., 1901.....Harden
Tuttle, Andrew F., N. C. Med College, 1901.....Germanton
Thomas, Ed. A., Univ. of Pa., 1891.....Ashland, Ky.
Thompson, Dunlap, Univ. of Md., 1901.....Morven
Underhill, Henry P., Univ. Med. Coll., Va., 1901.....Selma
Woodruff, A. C., N. C. Med. Coll., 1901.....Enterprise
Watson, Sam'l P., Univ. of Md., 1901.....Rock Hill, S. C.
Williams, Albert F., Univ. of Md., 1901.....Kenansville
Zimmerman, Robt. N., N. C. Med. Coll., 1901.....Enterprise

41ST SESSION—June, 1902, Wilmington.

(Members present: Drs. E. C. Register, J. Howell Way, D. T. Tayloe, T. E. Anderson, Albert Anderson, Jno. C. Walton and Thos. S. McMullan.)

Anders, McTyeire G., Md. Med. Coll., 1901.....Connelly's Springs
Bailey, Joseph W., Coll. P. & S., St. Louis, 1901.....Mineral Springs
Ballou, James L., Univ. of Nashville, 1901.....Crumplers
Barnes, Benj. F., Univ. of Md., 1902.....Elm City
Brown, Clarence S. (col.), Leonard Med. Coll., 1901.....Winton
Boone, Wm. H., N. C. Med. Coll., 1902.....Morrisville
Blackwell, Edith B. (fem.), Woman's Med. Coll., N. Y., 1891.Greensboro
Bellamy, R. H., Jeff. Med. Coll., 1902.....Wilmington
Cathell, J. Edwin, Univ. of Md., 1899.....Tyro Shops
Collier, Geo. Kirby, Coll. P. & S., Balto., 1900.....Wilmington
Cooke, Fred. K., Tulane Univ. of La., 1901.....Louisburg
Costner, Geo. H., Univ. of Md., 1901.....Lincolnton
Covington, Lewis C., Univ. Coll. of Med., Va., 1901.....Vanceboro
Duncan, Chas. L., Univ. of Md., 1902.....Beaufort
English, Edwin S., Univ. of South, Tenn., 1901.....Brevard
Edwards, Geo. P., Univ. of Ga., 1902.....Hildebran
Exum, Wyatt, Jr., Med. Coll. of Va., 1901.....Saulston
Frampton, James, S. C. Med. Coll., 1894.....Hendersonville
Gayle, Ed. M., Univ. of Va., 1902.....Warrenton
Grant, W. H., Dartmouth Med. Coll., 1859.....Pine Bluff

Name and College of Graduation.	*Address at Time Licensed.*
*Guerrard, Arthur R., Bellevue Med. Coll., 1899	Flat Rock
Graham, Joseph, Univ. of Pa., 1901	Hillsboro
Hayden, Catherine Phœbe (female), Univ. of Col., 1894	Raleigh
Hennessee, E. Augustus, U. S. Grant Univ., 1897	Glen Alpine
Hicks, Isham F., N. C. Med. Coll., 1902	Faison
Hardy, Ira May, Med. Coll. of Va., 1901	Washington
Hauser, Emanuel Olin, Balto. Univ., 1902	Fallston
Harrill, Lawson B., U. S. Grant Univ., 1897	Caroleen
Harris, John L., Univ. of Md., 1902	Winston
Huntington, Geo., Coll. P. & S., N. Y., 1871	
Hunter, Joseph McK., Louisv'l Med. Coll., 1896	Cherryville
Johnson, Richard H., Univ. of Md., 1894	Baltimore, Md.
Jones, John Walter, U. S. Grant Univ., 1900	Boone
King, Parks M., Bellevue Med. Coll., 1902	Charlotte
Kirkpatrick, L. R., N. C. Med. Coll., 1902	Blackstock
Keerans, L. C., Univ. of Md., 1902	Charlotte
Lane, Wm. K., Jeff. Med. Coll., 1902	Goldsboro
Munroe, Henry S., N. C. Med. Coll., 1902	Lenoir
Maxwell, Henry B., Univ. of Md., 1902	Whiteville
Morton, Geo. E., Univ. of Ga., 1902	Vance County
Matheson, J. P., N. C. Med. Coll., 1902	Taylorsville
McCracken, J. Rufus, N. C. Med. College, 1902	Clyde
McIver, Lynn, Univ. of Ky., 1901	Sanford
McLean, John W., N. C. Med. Coll., 1902	Cameron
McQueen, A. B., N. C. Med. Coll., 1902	Fayetteville
Oates, George, Univ. of Louisv'l, 1894	Grover
Paddison, John Robert Jr., Univ. of Md., 1902	Mt. Airy
Phifer, Fred W., Univ. of Md., 1902	Statesville
Phifer, Ed. Wm., N. C. Med. Coll., 1902	Morganton
Reid, Chas. E., Jeff. Med. Coll., 1895	Hot Springs
Reitzel, Claude E., Coll. P. & S., Atlanta, 1902	Liberty
Russell, Lloyd P., Univ. of Nashville, 1901	Fletcher
Rogers, McLain, Coll. P. & S., Atlanta, 1902	Clyde
Rogers, Carey P., Johns Hopkins Univ., 1902	Raleigh
Skinner, Lewis C., N. C. Med. Coll., 1902	Davidson
Sharp, Wm. B. (col.), Leonard Med. Coll., 1901	Harrellsville
Shuford, Jacob H., Univ. of Mich., 1901	Hickory
Taylor, James Nath., Med. Coll. of Va., 1901	Pittsboro
Thomas, Pride Jones, Univ. of Md., 1902	Wilmington
Walker, Herbert D., Univ. of Md., 1902	Creswell
Wilson, Hugh, Univ. of Ga., 1891	William's Mills
Wiseman, C. Baxter, Coll. P. & S., Balto., 1902	Henrietta
Williams, James M., Univ. of Md., 1902	Warren
Watkins, Jas. W. (col.), Leonard Med. Coll., 1901	Reidsville
Woltz, John L., Southern Med. Coll., 1877	London

*Made highest grade.

Name and College of Graduation. *Address at Time Licensed.*

Williams, Peter H. (col.), Leonard Med. Coll., 1901.....Raleigh
Walker, John W. (col.), Leonard Med. Coll., 1902.....Asheville
Washam, Wm. Worth, N. C. Med. Coll., 1902.....Conover's Ford
Waite, Herbert H., Univ. of Mich., 1901.....Asheville
Withers, Samuel, N. C. Med. Coll., 1902.....Davidson
Yount, Eugene McD., N. C. Med Coll., 1902.....Conover
Sisk, James A., N. C. Med. Coll., 1902.....Harmony

42D SESSION—June, 1903, Hot Springs.

(Members Board present: Drs. M. H. Fletcher, Geo. W. Pressly, A. A. Kent, Chas. O'H. Laughinghouse, J. T. J. Battle, Jas. M. Parrott and F. H. Russell.)

Adams, Lyttle C., N. C. Med. Coll., 1903.....Jonesville
Alston, Willis Jr., Univ. of Md., 1903.....Littleton
Aydlette, Joseph P., Univ. of Ky., 1901.....Earl
Brown, Thomas E. W., Coll. P. & S., N. Y., 1900.....Asheville
Boyles, Joseph H., Coll. P. & S., Balto., 1903.....Greensboro
Cowles, Henry C. Jr., Coll. P. & S., N. Y., 1903.....Statesville
Coppedge, Neilson P., N. C. Med. College, 1903.....Rockingham
Coppedge, Lewellyn J., N. C. Med. Coll., 1903.....Rockingham
Clemenger, Francis J., Univ. of Denver, 1902.....Asheville
Chestnut, Dallas W. (col.), Leonard Med. Coll.....Wilmington
Carroll, John W., Univ. of Md., 1903.....Raleigh
Caveness, Alfred H., Balto. Univ., 1901.....Coleridge
Caveness, Zebulon M., Univ. of N. C., 1903.....Greensboro
Childs, Julius A., S. C. Med. Coll., 1888.....Hickory
Campbell, R. A., St. Louis Med. Coll., 1875.....Pine Bluff
Davis Job W., Med. Coll. of Va., 1903.....Veruna
Dosher, Julius A., Balto. Med. Coll., 1903.....Southport
Dixon, Guy E., Coll. P. & S., St. Louis, 1903.....Belwood
Daniels, Oscar C., Med. Coll. of Va., 1903.....Oriental
Dees, Daniel A., Balto. Med. Coll., 1903.....Grantsboro
DeCorniss, Jos. L., Univ. of Md., 1903.....Shawsboro
Edwards, Charles P., Tenn. Med. Coll.....Bald Creek
Flow, James W., N. C. Med. Coll., 1898.....Glass
Fowlkes, John I., Coll. P. & S., Atlanta, 1903.....Rockingham
Greenwood, Solomon E., Tenn. Med. Coll., 1902.....Mascot
George, David S., N. C. Med. Coll., 1903.....Buck Shoals
Gilmore, Willis D., Univ. of N. C., 1903.....Raleigh
Hawkins, Pompey L. (col.), Leonard Med. Coll., 1903.....Kittrell
Hall, Price B., N. C. Med. Coll., 1903.....Belmont
Hoover, Chas. H., Balto. Med. Coll., 1903.....Crimsie
Hammond, Alfred T., Univ. Coll. of Med., 1903.....Trenton
Johnson, Thos. C., Med. Coll. of Va., 1903.....Tomahawk
Johnson, Floyd, Memphis Hosp. Coll. of Med., 1903.....Benson
Jones, Frank, Balto. Med. Coll., 1903.....Thermal City

Name and College of Graduation.	*Address at Time Licensed.*
Jones, Wm. M. Jr., Univ. of Md., 1903	Asheville
King, Richard M., Jeff. Med. Coll., 1903	Philadelphia, Pa.
Linville, W. Clinton, Univ. of Md., 1903	Kernersville
Lilly, James L., Univ. Coll. of Med., Va., 1903	Mt. Gilead
*Little, Thos. R., Univ. of Pa., 1900	Greensboro
Long, Chas. L., Coll. P. & S., 1884	Pine Bluff
Mann, Thos. A., Univ. of Md., 1903	Baltimore, Md.
Mariner, Napoleon B., Univ. Coll. of Med., Va., 1903	Jamesville
Murphy, Wm. B. Jr., Univ. Coll. of Med., Va., 1903	Tomahawk
Mason, Robert E., Univ. of Ga., 1900	Charlotte
Matthews, Martin L., Univ. of N. C., 1903	East Bend
Montgomery, H. M., N. C. Med. Coll., 1903	Burlington
Murphy, J. Gerald, Univ. of Louisv'l, 1903	Atkinson
McFayden, Archibald A., N. C. Med. Coll., 1903	Raeford
McNider, Wm. deB., Univ. of N. C., 1903	Raleigh
McPherson, S. D., Univ. of Md., 1903	Liberty
Norton, Chas. F., Univ. of Texas, 1899	Asheville
Nichols, James T., Denver & Gross Med. Coll., 1903	Barnard
Outlaw, James B., Memphis Hosp. Coll. of Med., 1902	Goldsboro
Petrie, Robert W., Univ. of Md., 1903	Reepsville
Pethel, James W. (col.), Howard Univ., 1900	Charlotte
Proffit Thos. J., Univ. of Louisv'll, 1903	Sugar Grove
Patterson, Ector G., Univ. of Md., 1903	Liberty
Pollard, Walter B., Univ. of Pa., 1899	Hamilton
Reynolds, John, Louisville Med. Coll., 1903	Asheville
Reynolds, James Herbert, Louisville Med. Coll., 1903	Asheville
Robinson, Willard F., Vanderbilt Univ., 1896	Mars Hill
Robinson, Wm. A., Univ. Coll., of Med., Va., 1900	Brink, Va.
Strohecker, Thomas A., N. C. Med. Coll., 1902	Davidson
Smoot, Morris L., Univ. Coll. Med., 1903	Salisbury
Sawyer, Walter W., Univ. of Md., 1903	Elizabeth City
Slate, Wesley C., Univ. of Tenn., 1903	Quaker
Sayers, Sam'l R., Univ. of Va., 1900	Hamlet
Thigpen, Guy F., Univ. of Md., 1903	Mildred
Walker, Walter E., Med. Coll. of Va., 1903	Richmond
Williams, Claude B., Univ. Coll. Med., Va., 1903	Elizabeth City
Wilkins, Sam'l A., Ky. Univ. 1902	Dallas
Wilson, Clarence L., N. C. Med. Coll., 1903	Newton
Whittaker, Asa C., Univ. of Tenn., 1903	Devon
Was, John W., Univ. of Mich., 1878	Asheville
Wood, Edward Jenner, Univ. of Pa., 1902	Wilmington
Valentine, Thos. H., Univ. Coll. of Med., Va., 1901	Voltare
Zimmerman, Chas. St. V., Nat. Univ., D. C., 1895	Asheville

* Made highest grade.

43D SESSION—May, 1904, Raleigh.

(Members of board present: Drs. M. H. Fletcher, J. M. Parrott, J. T. J. Battle, F. H. Russell, A. A. Kent, Chas. O'H. Laughinghouse and Geo. W. Pressly.)

Name and College of Graduation.	*Address at Time Licensed.*
Abbott, Eulalie M. (female), Boston Univ., 1879	High Point
Anderson, Paul V., Univ. of Va., 1904	Wilson
Anderson, Wade H., University of Va., 1902	Wilson
Allen, Benj. G., Columbia University, 1904	Henderson
Andrews, Robert M., Memphis Hosp. Coll. of Med., 1901	Cliffdale
Baird, Campbell A., N. C. Med. Coll., 1904	Bethel Hill
Beam, Jasper L., Coll. P. & S., Atlanta, 1899	Crouse
Bowman, Hugh E., N. C. Med. Coll., 1904	Davidson
Blair, A. McNeil, Niagara Univ., 1897	Southern Pines
Bradsher, Wm. A., Univ. of Md., 1904	Roxboro
Billings, Arthur E., N. C. Med. Coll., 1904	Charlotte
Bourneman, John H., Jeff. Med. Coll., 1903	Wilmington
Bradford, Robert H., N. C. Med. Coll., 1904	Charlotte
Busby, Julian G., Univ. of Md., 1904	Salisbury
Bradshaw, James I., Tenn. Med. Coll., 1901	Relief
Chapman, Geo. M., U. S. Grant Univ., 1897	Logan's Store
Craven, W. W., Univ. of Md., 1903	McKeesport, Pa.
Coffman, Wm. H., P. & S., Balto., 1884	Asheville
Dalton, W. N., N. C. Med. Coll., 1904	Danbury
Davis, Joe T., Univ. Coll. Med., 1903	Gumberry
Edwards, Arthur D., Univ. of Md., 1903	N. Wilkesboro
Everhart, W. H., Univ. of Md., 1903	Newton
Ferrebee, Celius G., Med. Coll. of Va., 1902	Shiloh
Garner, H. A., Univ. of Md., 1902	Asheville
Gibbs, John B., N. C. Med. Coll., 1904	Burnsville
Green, Arthur W., Univ. Coll. Med., Va., 1904	Powellsville
*Guthrie, Marshall C., Univ. of N. C., 1904	Raleigh
Hicks, Calvin S., Univ. of Md., 1904	Durham
Hovis, L. W., N. C. Med. Coll., 1904	Charlotte
Highway, S. C., Med. Coll., Ohio, 1885	Murphy
Hoffler, E. D. (col.), Leonard Med. Coll., 1904	Greenville
Holt, Thos. J., Med. Coll. of Va., 1904	Smithfield
Justice, James T., N. C. Med. Coll., 1904	Jacksonville
Laton, J. F., N. C. Med. Coll., 1904	Albemarle
Lee, S. P. J., Md. Med. Coll., 1904	Dunn
Lockett, E. A., Univ. of Pa., 1902	Winston
Lamb, B. C., Univ. of Md., 1903	Elizabeth City
Littlejohn, R. N. Jr., Univ. of Md., 1903	Charlotte
Lyon, E. H., Univ. of Md., 1903	Stem
Love, B. E., Univ. of Md., 1904	Leesburg

* Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
Lowry, J. Robert, Univ. of Md., 1904	County Line
Martin, John H., Univ. Nashville, 1903	Poindexter
Moore, W. T., Univ. of South, 1904	Voltaire
Miles, May S. (female), Laura Mem. Coll., Ohio, 1898	Greensboro
Myers, John Q., N. C. Med. Coll., 1904	Wilkesboro
McGehee, John W., Univ. of Md., 1904	Madison
McIntyre, Dugald G., N. C. Med. Coll., 1904	Lumberton
McLean, Chas. E., N. C. Med. Coll., 1903	Gastonia
Nichols, A. A., Univ. of Nashville, 1898	Painter
Nicholson, John L., Univ. of Md., 1904	Washington
Orr, Chas. C., Univ. of Md., 1904	Charlotte
Orr, Robert J., Louisville Med. Coll., 1893	Brevard
Orr, Nathan A., Univ. Coll. of Med., Va., 1899	Charlotte
Plummer, John O. (col.), Leonard Med. Coll., 1904	Warrenton
Phillips, J. B., Jr., Univ. of Md., 1903	Spring Hope
Reynolds, Thos. F., N. C. Med. Coll., 1904	Leicester
Riddle, Jos. B., Vanderbilt University, 1898	Bridgewater
Reed, D. H., Columbian Univ. D. C., 1901	Washington, D. C.
Salmons, H. C., N. C. Med. Coll., 1904	Buck Shoals
Sharpe, Frank L., Univ. of N. C., 1904	Statesville
Strong, Wm. M., N. C. Med. Coll., 1904	Charlotte
Simpson, W. P., Univ. of Va., 1903	Wilson
Stanley, John H., Univ. of N. C., 1904	Raleigh
Smith, W. F., N. C. Med. Coll., 1904	Salisbury
Stewart, James J., N. C. Med. Coll., 1904	Newton
Thompson, Hugh R., Univ. Coll. of Med., Va., 1902	Reidsville
Ward, Jesse E., Univ. of Md., 1904	Wilson
Williams, John R., Univ. of Mich., 1903	Asheville
Willis, Arthur P., Univ. of N. C., 1905	Cana
Windley, R. P., Univ. of Md., 1903	Lake Landing
Wright, Thos. H., Univ. of Va., 1902	
Wright, Otho C., Coll. P. & S., Balto., 1893	
Woodard, Chas. A., Univ. of Va., 1904	Wilson
Young-High, Carolina J., Univ. of Mich., 1897	
Taylor, W. I., N. C. Med. Coll., 1902	Harrellsville

44TH SESSION—May, 1905, Greensboro.

(Members of Board present: Drs. Chas. O'H. Laughinghouse, Geo. W. Pressly, A. A. Kent, James M. Parrott, J. T. J. Battle, M. H. Fletcher, and F. H. Russell.)

Ashton, Fielding L., Univ. Coll. of Med., 1905	Richmond, Va.
Archer, Isaac J., Northwestern Univ., Ill., 1896	Black Mountain
Arnold, Lourie J., N. C. Med. Coll., 1905	Sanford
Akerman, Joseph, Johns Hopkins Med. Coll., 1900	Wilmington
Battle, Ivan P., Jeff. Med. Coll., 1904	Rocky Mount
Baxter, John N. (col.), Leonard Med. Coll., 1905	Rocky Mount

Name and College of Graduation.	*Address at Time Licensed.*
Blake, Joseph F., N. C. Med. Coll., 1905	Chadbourn
Brooks, Baird N., Univ. of Md., 1905	Nashville
Barnett, Isaac E., Tenn. Med. Coll., 1901	White Rock
Brunfield, Wm. A., Univ. of Va., 1897	Renan, Va.
Bostic, Wm. C., N. C. Med. Coll., 1905	Forest City
Basnight, Thos. G., Univ. of Md., 1904	Stokes
Benton, Ashley M., N. C. Med. Coll., 1905	Evergreen
Bonner, Kemp P. B., Med. Coll. of Va., 1905	Aurora
Brookshire, Harley G., N. C. Med. Coll., 1905	Emma
Cooper, Geo. M., Univ. Med. Coll., Va., 1905	Clinton
Christian, Andrew J. (col.), Leonard Med. Coll., 1905	Winston
Carroll, Robert S., Rush Med. Coll., 1897	Asheville
Carroll, John L., Louisville Med. Coll., 1905	Asheville
Cocke, Jere L., Louisville Med. Coll., 1905	Asheville
Caldwell, Julius A., Jr., Johns Hopkins, 1904	Salisbury
Cramer, John B., Univ. of N. C., 1905	Chapel Hill
Carroway, James F., Med. Coll. of S. C., 1900	Asheville
Clodfelter, Chas. M., P. & S., Balto., 1905	Lexington
Cooke, Linton H., Univ. of N. C.	Aulander
Croom, Arthur B., Univ. of Md., 1905	Maxton
Donnelly, John, Univ. of N. C., 1905	Charlotte
Duguid, James A., N. C. Med. Coll., 1905	New Bern
Dye, John C., N. C. Med. Coll., 1905	Fayetteville
Disosway, Alpheus W., Univ. of Md., 1905	New Bern
Deshazo, Wm. D., Univ. of Md., 1905	Spencer, Va.
Eberle, Harry A., McGill Univ., 1876	Greensboro
Farrar, Mont. R., Univ. of N. C., 1905	Greensboro
Flagge, Phillip W., Washington Univ., 1902	Greensboro
Garrigues, Henry J., Univ. Copenhagen, 1869	Tryon
Edwards Bertie O., N. C. Med. Coll., 1905	Lamel Springs
Faust, De Lacy, N. C. Med. Coll., 1905	Liberty
Gibson, Milton R., Univ. of Md., 1905	Gibson
Gibson, John S., Univ. of Md., 1905	Gibson
Graham, Archibald W., Univ. of Md., 1905	Charlotte
Harrison, Henry H., Jeff. Med. Coll., 1905	Enfield
Harrison, John S. Med. Coll. of Va., 1903	Elm City
Halford, Joseph W., N. C. Med. Coll., 1905	Chalybeate Springs
Haynes, Baxter M., N. C. Med. Coll., 1905	Cliffside
Harbeck, Edward V., N. C. Med. Coll., 1905	Gem
Hill, Geo. S., Harvard Univ., 1899	Marblehead, Mass.
Hooper, Delos D., Univ. Med. Coll., Va., 1905	Tuckaseigee
Jacox, Richard C. (col.), Leonard Med. Coll., 1902	Franklin, Va.
Johnston, Livingston F., Jeff. Med. Coll., 1905	Wallace
Johnson, Alice E. (female), Wom. Med. Coll., Phila., 1905	South. Pines
Lander, J. T., Univ. Coll. Med., Va., 1905	Chinquepin

Name and College of Graduation.	*Address at Time Licensed.*
Long, W. Talmage, Balto. Med. Coll., 1905	Roxboro
Kafer, Oswald O., Univ. of Md., 1905	New Bern
Mebane, Wm. C., N. C. Med. Coll., 1905	Mt. Airy
Martin, J. Floyd, N. C. Med. Coll., 1905	Yadkinville
Moore, Joseph N., Tulane Univ. of La., 1905	Wilson
Moore, Baxter S., Univ. of Va., 1902	Charlotte
Moncure, Wm., Univ. of Penn., 1902	Raleigh
Morgan, Cassius H., Tenn. Med. Coll., 1901	Higgins
McKaig, Frisby T., Univ. of Ala., 1890	Robbinsville
McPhail, Wilbur A., Univ. of Nashville, 1904	Ashpole
McCombs, Cyrus J., N. C. Med. Coll., 1905	Mint Hill
McCauley, L. E. (col.), Leonard Med. Coll., 1905	Raleigh
*Newell, Leon B., Univ. of N. C., 1905	Newells
Nalle, Brodie C., Univ. of Va., 1903	Charlotte
Norman, Joseph H., Tulane Univ. of La., 1905	Brinkleyville
Person, Edgar C., Med. Coll. of Va., 1905	Pikeville
Proctor, J. Peebles, Univ. Coll. of Med., Va., 1903	Williamston
Perry, Henry B., N. C. Med. Coll., 1905	Sweet Water
Phillips, James J., Coll. P. & S., N. Y., 1904	Tarboro
Pritchard, Arthur T., Jeff. Med. Coll., 1905	Asheville
Rowe, Herbert E., N. C. Med. Coll., 1905	Newton
Reeves, Wm. P., Univ. of South, 1903	Greensboro
Sloop, Eustace H., N. C. Med. Coll., 1905	Mooresville
Sutton, Carl W., Tulane Univ. of La., 1905	La Grange
Stevens, R. S., Univ. of N. C., 1905	Smithfield
Sally, Edward McQ., Univ. of Md., 1905	Tryon
Smith, Owen, Jeff. Med. Coll., 1904	Asheville
Summers, Joseph W., N. C. Med. Coll., 1905	Davidson
Saunders, Joseph H., Univ. Coll. of Med., Va., 1905	Washington
Stringfield, Samuel, Jeff. Med. Coll., 1905	Waynesville
Stone, James A., Univ. of Md., 1905	Shallotte
Thomas, Edmund L. (col.), Leonard Med. Coll., 1905	Charlotte
Tillotson, Squire F., N. C. Med. Coll., 1905	King
Webb, Lorenzo S., Univ. of N. C., 1905	Windsor
Wells, James M., N. C. Med. Coll., 1905	Shelby
Walker, Emmett E., Univ. Coll. Med., Va., 1900	Snow Hill
Witherbee, Wm. D., McGill Univ., 1899	Charlotte
Woodson, Chas W., Coll. P. & S., N. Y., 1904	Salisbury
Wyatt, James L., Medico-Chi. Phila., 1905	Wadesboro
Whitaker, Joel, Univ. of Md., 1905	Raleigh
Williams, J. B. Jr., Balto. Med. Coll., 1896	Oxford

*Made highest grade.

4ETH SESSION—May, 1906, Charlotte.

(Board present: Drs. A. A. Kent, Chas. O'H. Laughinghouse, M. H. Fletcher, James M. Parrott, J. T. J. Battle, Frank H. Russell and Geo. W. Pressly.)

Name and College of Graduation.	*Address at Time Licensed.*
Allen, Wm., P. & S., Balto., 1906	Lexington, Va.
Abernathy, Miles B., N. C. Med. Coll., 1906	Charlotte
Abernathy, Claude O., University of N. C.	Chapel Hill
Berkley, Greenville R., Jeff. Med. Coll., 1906	Atlanta
Byers, James A. (col.), Leonard Med. Coll., 1906	Greensboro
Burnett, Peter W. (col.) Leonard Med. Coll., 1906	Oak City
Boyce, John M., N. C. Med. Coll., 1903	Whiteville
Boger, Dan'l T., N. C. Med. Coll., 1906	Unionville
Bowers, Albert H., Univ. Coll. of Med., 1906	Thomasville
Beall, Louis G., N. C. Med. Coll., 1906	Greensboro
Carr, John R., Johns Hopkins, 1904	Durham
Carlton, R. L., Univ. of Md., 1906	N. Wilkesboro
Casteel, Lewis R., Vanderbilt Univ., 1893	Culberson
Currie, Dan'l S., N. C. Med. Coll., 1906	Maxton
Carstarphen, Wm. T., Jeff. Med. Coll., 1906	Garysburg
Carpenter, Forest A., N. C. Med. Coll., 1906	Henrietta
Clark, Geo. T., N. C. Med. Coll., 1906	Sandifer
Caldwell, Milton M., Jeff. Med. Coll., 1901	Concord
Coffey, Lawrence H., Med. Coll. of Va., 1906	Coffeys
Corpening, Oscar J., Univ. Coll. of Med., 1906	Lenoir
Chalmers, Henry C., Univ. of Va., 1905	Woodsdale
Clement, Edward B., Jeff. Med. Coll., 1906	Salisbury
Dimmette, James A., Univ. of Louisville, 1905	Welbury, Ky.
Ezzell, Sam'l H., P. & S., Atlanta, 1900	VanWyck, S. C.
Elias, Lewis W., P. & S., N. Y., 1903	Asheville
Farthing, Logan E., Univ. of N. C., 1906	Boone
Fenner, Edwin L., Univ. of Md., 1906.	
Fleming, Major I., Jeff. Med. Coll., 1906	Hamilton
Grantham, Wilmer L., N. C. Med. Coll., 1906	McDonald
*Gaines, Lewis M., Johns Hopkins, 1906	Wake Forest
Harper, James H., Jeff. Med. Coll., 1906	Snow Hill
Holshauser, Allen R., Chatanooga Med. Coll., 1904	Rockwell
Hodgin, Henry H., N. C. Med. Coll., 1906	Red Springs
Hodges, James M., Balto. Med. Coll., 1904	Banner Elk
Hunter, Wm. Myers, Georgetown Univ., D. C., 1905	Charlotte
Hull, Theo. Y., Coll. P. & S., N. Y., 1902	Asheville
Hocutt, Battle A., Univ. of N. C., 1906	Wakefield
Hall, James F., Jeff. Med. Coll., 1904	Morganton
Haggard, John T., Univ. Coll. of Med., Va., 1906	Aulander
Jauney, Francis W., Univ. of Md., 1905	Baltimore, Md.

* Made highest grade.

Name and College of Graduation.	*Address at Time Licensed.*
Jarboe, Jacob P., Georgetown Univ., D. C., 1905	Greensboro
Jones, Harry H., Univ. of N. C., 1906	Franklin
Jordan, Wm. S., Univ. of N. C., 1906	Raleigh
Kornegay, Lemuel W., N. C. Med. Coll., 1906	Mt. Olive
Lafferty, Robert H., N. C. Med. Coll., 1906	Davidson
Lane, John L., N. C. Med. Coll., 1906	Faison
Long, Van McK., N. C. Med. Coll., 1906	Unionville
Leeper, Donald H., N. C. Med. Coll., 1906	Charlotte
Lapham, Mary E. (female), Woman's Med. Coll., Phila., 1900	Highlands
Lloyd, Reuben A. (col.), Meharry Med. Coll., 1904	Williamston
Moorfield, Rufus H., N. C. Med. Coll., 1906	Vade Mecum
Manville, W. E., Univ. of Md., 1906	Washington, D. C.
Morrison, Rufus R., N. C. Med. College, 1906	Shelby
Martin, Mary L., Woman's Med. Coll., Pa., 1906	Davidson
McCoy, Thos. M., N. C. Med. Coll., 1905	Huntersville
McLemore, Geo. A., Univ. of N. C., 1906	Parkersburg
Nisbet, Verner, Univ. of Pa., 1901	Philadelphia, Pa.
Newell, Hodge A., Balto. Coll. P. & S., 1906	Mapleville
Peeler, Clarenee N., N. C. Med. Coll., 1906	Casar
Perkins, David R., Balto. Med. Coll., 1903	Marshville
Peete, Chas. H., Univ. of Va., 1903	Warrenton
Pritchard, John L., P. & S., Balto., 1906	Aulander
Perkins, Frank E., Univ. Buffalo, N. Y., 1905	Copenhagen, N. Y.
Patterson, Joseph F., Jeff. Med. Coll., 1906	New Bern
Parrott, Albert DeK., Univ. Coll. Med., Va., 1906	Kinston
Quiller, Emile B., Univ. of Md., 1906	Rocky Mount
Ringer, Paul H., Coll. P. & S., N. Y., 1904	Asheville
Rhodes, James S., Med. Coll. of Va., 1906	Williamston
Ruffin, Joseph B., Univ. of the South, 1898	Powellsville
Rose, Abraham F., Jeff. Med. Coll., 1906	Smithfield
Simmons, John O., Grant Univ., 1904	Dysartsville
Stone, Wesley M., N. C. Med. Coll., 1906	Davidson
Smith, Ezekiel E. (col.), Howard Univ., 1903	Fayetteville
Sheep, Wm. L., Geo. Wash. Univ., 1906	Washington, D. C.
Stancill, Wm. W., Univ. Coll. Med., 1906	Margarettsville
Speight, Joseph P., Jeff. Med. Coll., 1906	Whitaker's
Taylor, Geo. W., N. C. Med. Coll., 1906	Laurel Springs
Tankersley, James Wm., Jeff. Med. Coll., 1906	Salisbury
Taylor, Emora A. (col.), Leonard Med. Coll., 1906	Bovina Miss.
Utley, Herbert H., Balto. Med. Coll., 1906	Cardenas
Vick, Geo. D., Jeff. Med. Coll., 1906	Selma
Williams, John W., Univ. of Md., 1906	Washington
Waddie, James C. (col.), Meharry Med. Coll., 1904	Greensboro
Wilcox, Jesse W., Univ. of N. C., 1906	Putnam
Wilkerson, Chas. B., Univ. of N. C	Durham
Yow, Iva A., N. C. Med. Coll., 1906	Sprite
York, Hugh B., Univ. Balto., 1906	Williamston

46TH SESSION—June, 1907, Morehead City.

(Members of board present: Drs. A. A. Kent, M. H. Fletcher, James M. Parrott, Chas. O'H. Laughinghouse, J. T. J. Battle, Frank H. Russell and G. T. Sikes.)

Name and College of Graduation. *Address at Time Licensed.*

Alexander, Emory Graham, Jeff. Med. Coll., 1904.....Charlotte
Austin, Fred. D., N. C. Med. Coll., 1907.....Charlotte
Anderson, James G., Univ. of N. C., 1906.....Asheville
Adkins, Elma H., Univ. Md., 1905.....Southport
Brittle, Paul C., Univ. Coll. Med., Va., 1907.....Woodland
Buckner, Rufus G., Arkansas Univ., 1897.....Asheville
Boyd, Lois (female), Woman's Med. Coll. of Balto., 1907.Barium Springs
Bruce, Wm. H. (col.), Leonard Med. Coll., 1907.....Henderson
Bebee, Wm. Thos. (col), Howard Univ., 1906.....Washington
Bitting, Numa Duncan, Jeff. Med. Coll., 1907.....Rural Hall
Baggett, Seaman, N. C. Med. Coll., 1907.....Dunn, Va.
Best, Henry B., Univ. of N. C., 1907.....Wilson
Bass, Spencer P., Univ. of Va., 1906.....Tarboro
Barefoot, Julius J., Univ. of N. C., 1907.....Wilson
Biggs, Montgomery H., Univ. of Pa., 1897.....Hinsdale, Ill.
Crowson, Samuel T., Univ. of Tenn., 1903.....Statesville
Crumpler, Paul, Univ. of Tenn., 1907.....Clinton
Cox, Thos. H., Univ. of Md., 1885.....Hertford
Capehart, Lovelace Brown (col.), Leonard Med. Coll., 1907....Raleigh
Currie, Edward Womack, N. C. Med. Coll., 1907.....Davidson
Coleman, Geo. S., Med. Coll. of Va.....Elizabeth City
Clifford, John S., Geo. Wash. Univ., 1906.....Charlotte
Duffy, Richard, Johns Hopkins, 1906.....New Bern
Duncan, Julius E., Univ. Coll. of Med., Va., 1907.....Moravian Falls
Drum, Elam A., Univ. Coll. Med., Va., 1907.....Richmond, Va.
Dowd, John Alex., N. C. Med. Coll., 1902.....Eagle Springs
Dees, R. O., Univ. of Md., 1906.....Grantsboro
Dick, Julius Vance, Univ. of N. C., 1907.....Whitsett
Edwards, A. W., Coll. P. & S., Atlanta, 1907.....Gilkey
Easley, Henry O., Univ. of Va., 1904.....Boardman
Easley, Philip S., N. C. Med. Coll., 1907.....Black Walnut, Va.
Eckel, O. F., Med. Coll. of S. C., 1907.....Edenburg, Ill.
Floyd, James W., Med. Coll. of S. C., 1900.....Liberty Hill, S. C.
Flowers, Clarence A., Coll. P. & S., Balto., 1905.....Cashsomer
Frizzelle, Mark T., Univ. Coll. Med., Va., 1907.....Snow Hill
Fisher, Hunter W. (col.), Leonard Med. Coll., 1907.....Beaufort
Ferrell, John A., Univ. of N. C., 1902.....Clinton
Gaylord, Cavassa J. Hubert (col.), Leonard Med. Coll., 1905....Roper
Grayson, Chas. Shober, Geo. Wash. Univ., D. C., 1906.....High Point
Guin, Lemuel Edwin, N. C. Med. Coll., 1907.....Unionville
Gray, Eugene Price, Johns Hopkins, 1905.....Winston-Salem
Harris, Arthur Graham, Univ. of South, 1905.....Fairfield

Name and College of Graduation. *Address at Time Licensed.*

Harrell, Geo. Norfleet, Univ. Coll. Med., Va., 1907.....Potecasi.
Haggard, Wm. Alden, Univ. Coll. Med., Va., 1907.....Windsor
Harper, Clifton G., Univ. Coll. of Med., Va., 1907.....Menola
Hand, Edgar Hall, N. C. Med. Coll., 1907.....Lowell
Hudson, John H., Coll. P. & S., Balto., 1907.....Wrightsville
Holliday, Robert Sumner (col.), Leonard Med. Coll., 1905..Fayetteville
Hennill, Mitchell Harvey, Eclectic Med. Institute, O., 1891.Coshocton, O.
Howe, Wm. B. W. Jr., Med. Coll. of S. C., 1906.....Spartanburg
Hood, John Sidney, Jeff. Med. Coll., 1907.....Charlotte
Hyatt, Houston Boyd, Univ. of Md., 1907.....Clinton
Hyatt, Fred C., Jeff. Med. Coll., 1907.....Waynesville
Ivey, Emmett W. Gibbs, Univ. of N. C., 1907.
Hobgood, James E., Jeff. Med. Coll., 1907.....Oxford
Justice, Gaston B., Coll. P. & S., Atlanta, 1907.....Marion
Jackson, Nathaniel (col.), Leonard Med. Coll., 1907.....Carthage
Knox, John Jr., Univ. of Md., 1906.....Lumberton
*Lineback, Robert Fred, Univ. of Pa., 1907.....Winston-Salem
Lynch, James M., Geo. Wash. Univ., D. C., 1905....National Soldiers Hame, Va.
Mayerburg, Israel W., Univ. of Pa., 1907.....Goldsboro
Moore, Chas. Edward, Jeff. Med. Coll., 1907.....Moore's Springs
Moore, Henry Spencer (col.), Leonard Med. Coll., 1907.....New Bern
Mills, Joseph Napoleon (col.), Leonard Med. Coll., 1907....Wilmington
Mann, Wm. (col.), Leonard Med. Coll., 1905.....Hertford
Matthews, John Herbert, N. C. Med. Coll., 1907.....Mt. Pleasant
Moore, James Claude, Univ. Coll. of Med., Va., 1907.....Globe
Mitchell, Paul Henry, Univ. Coll. of Med., Va., 1907.....Ahoskie
Merritt, John Hamlet, Univ. of N. C., 1906.....Roxboro
McLean, Peter, Univ. of Md., 1906.....Laurinburg
McIntosh, Donald M., Med. Coll. of Va., 1904.....Old Fort
McDonald, Augustus Alex., N. C. Med. Coll., 1905.....Pinehurst
McDonald, William W., Vanderbilt Univ., 1905.....Pee Dee
Norris, Henry, Univ. of Pa., 1906.....Rutherfordton
Nesbit, Chas. T., Balto. Med. Coll., 1903.....Wilmington
Noble, Robert P., Univ. of N. C., 1907.....Selma
Nichols, Asbury Sullivan, Tenn. Med. Coll., 1906.....Sylva
Olive, Wm. Wade, Univ. of Md., 1906.....Apex
Ohlinger, Larrin B., West Penn. Med. Coll., 1900.....Balsam
Olive, Percy Wingate, Balto.. Coll. P. & S., 1907.....Apex
Packard, F. S., Med. School of Maine, 1887.....Warrenton
Powell, Eppie Clifton, Univ. of Nashville, 1907.....Auburn
Parker, Fred Marshall.....West Durham
Peterson, Chas. A., N. C. Med. Coll., 1907.....Relief
Perry, Ernest Monroe, Coll. P. & S., Balto 1907.....Louisburg
Price, Killian A., Univ. of Va., 1907.....Gilbert, S. C.

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*Made highest grade.

Name and College of Graduation. *Address at Time Licensed.*

Powers, John Brewer, Coll. P. & S., N. Y., 1907.....Wake Forest
Querry, Richard C., Univ. Coll. Med., Va., 1907.....Huntersville
Robinson, W. James, Univ. Med. Coll., Va., 1904.....Carter, Tenn.
Ross, John K., Jeff. Med. Coll., 1907.....Charlotte
Rhyne, Robert E., N. C. Med. Coll., 1907.....Gastonia
Roberts, Peter Franklin (col.), Leonard Med. Coll., 1907..West Raleigh
Reid, John Franklin.....Concord
Slocum, Robert B., Johns Hopkins, 1905.....Wilmington
Stovall, Arnold, Med.-Chi., Phila., 1904.....Madison, Ga.
Smart, Joseph B., Grant Univ., 1900.....Ellenboro
Smith, Slade Alvah, N. C. Med. Coll., 1907.....Elkton
Smith, William Hopton, Univ., Pa., 1906.....Goldsboro
Toulon Alfred Joseph, Med.-Chi., Phila., 1906.....Whittier
Thurber, Austin H. (col.), Leonard Med. Coll., 1907.....Wilmington
Turner, Henry Gray, Univ. of Penn., 1906.....Raleigh
Taylor, James R., Univ. Coll. Med., Va., 1907.....Kinston
Upchurch, Garey J., Univ. of Md., 1906.....Apex
Watkins, Finsa B., Jeff. Med. Coll., 1907.....Rutherfordton
Willingham, Benj. Jos., Med. Coll. of Va., 1906.....Hope Mills
Wood, Ivey A., Univ. of N. C., 1907.....Ryland
Warren, John Waddell, Univ. Coll. Med., Va., 1907.....Edenton
Wallace, John W., N. C. Med. Coll., 1907.....Huntersville
Woodard, Albert G., Univ. of N. C., 1907.....Princeton
Wilson, Joshua H. (col.), Meharry Med. Coll., 1905.....Florence, S. C.
Woolsey, Thos. H., Univ. of Tenn., 1900.....Greenville, Tenn.
York, Alex. Arthur, Chattanooga Med. Coll., 1907.....Linwood

47TH SESSION—June, 1908, Winston-Salem.

(Members of the board present: Drs. A. A. Kent, G. T. Sikes, J. T. J. Battle, M. H. Fletcher, Chas. J. O'H. Laughinghouse, F. H. Russell, and James M. Parrott.)

Bolle, Chas. P., Univ. of Va., 1897.....Wilmington
Avent, Frank W. (col.), Leonard Med. Coll., 1908.....New Bern
Bizzell, Thos. Malcomb, Univ. of Md., 1908.....Jason
Baird, John Wm., Tenn. Med. Coll., 1901.....Mars Hill
Berry, John, Jeff. Med. Coll., 1908.....Chapel Hill
Baird, David E., Balto. Med. Coll., 1906.....Saginaw
Burns, Arthur B., Atlanta Med. Coll., 1908.....Waynesville, Ga.
Bissell, Helen W. (female), Woman's Med. Coll., N. Y., 1879, Rochester, N. Y.
Brown, V. J., Tenn. Med. Coll., 1905.....Ogden, Tenn.
Bingham, Robert Knox, Univ. of Tenn., 1905.....Statesville
Carr, Ransom Lee, Balto. Med. Coll., 1907.....Wallace
Choate, B. O., Med. Coll. of Va., 1908.....Sparta
Covington, Platt Walker, Univ. of Md., 1908.....Rockingham
Chaney, Thos. Morris, Univ. of Md., 1896.....Old Fort

Name and College of Graduation. *Address at Time Licensed.*

Carter, Edward E. (col.), Leonard Med. Coll., 1908.....Winston
Dees, Ralph E., Univ. of Md., 1906.....Grantsboro
Dodds, Solon Arthur, Johns Hopkins, 1908.....Salisbury
Edwards, S. R., Univ. of Md., 1908.....Siler City
Engel, Wm. Royal, Jeff. Med. Coll., 1906.....Tryon
Erwin, Herbert Jones (col.), Leonard Med. Coll., 1908.....Morganton
Freeman, Robert Herman, Jeff. Med. Coll., 1908.....Wake Forest
Frazier, H. T., Coll. P. & S., N. Y., 1901.....Asheville
Fisher, Chas S. (col.), Leonard Med. Coll., 1908.....Raleigh
Gardener, Garrett Dewey, Tenn. Med. Coll., 1908.....Ivy
Garrenton, Cecil, Med. Coll. of Va., 1908.....Shiloh
Green, Wm. Willis, Univ. of N. C., 1908.....Franklinton
Honnicutt, Wm. Joseph, Univ. of Tenn., 1895.....Asheville
Harris, David Watson, Univ. of N. C., 1908.....Fayetteville
Henry, John Robert (col.), Leonard Med. Coll., 1908.....Beaufort
Hudgett, W. C., Md. Med. Coll., 1903.....Southern Pines
James, Wm. Daniel, Jeff. Med. Coll., 1908.....Laurinburg
Jett, S. J., Univ. of South, 1903.....Reidsville
Irwin, Haner Carson, Univ. of Md., 1905.....Charlotte
Kerr, John D. Jr., Univ. of Md., 1908.....Clinton
Johnson, Wm. Alex., N. C. Med. Coll., 1907.....Mt. Airy
Johnson, Wingate H., Jeff. Med. Coll., 1908.....Raleigh
Lawrence, Chas. S., Geo. Wash. Univ., 1908.....Mt. Airy
Lane, Paul P., ..., 1908.....Wilson
Lassater, Edgar W., Univ. Coll. of Med., 1908.....Rich Square
Ledbetter, Penlie B., Jeff. Med. Coll., 1908.....Pisgah Forest
*Kitchin, Thurman D., Jeff. Med. Coll., 1908.....Scotland Neck
Maynard, Julian Decatur, Univ. of N. C., 1908.....Chapel Hill
Matkins, J. Marion, Univ. of Tenn., 1908.....McIver
Mock, Frank L., N. C. Med. Coll., 1908.....Winston-Salem
Mann, James E., Univ. of Md., 1907.....Fairfield
Mebane, Wm. Nelson, Geo. Wash. Univ., 1908.....Hillsboro
Mitchell, Laurence S. (col.), Leonard Med. Coll., 1908.....Ahoskie
Monk, Geo. Monroe, Univ. of N. C., 1908.....Raleigh
McPherson, Robert Gray, Univ. of N. C., 1908.....Snow Camp
McLean, Allen, Univ. of Md., 1908.....Laurinburg
McIver, Evander McNair, Univ. Coll. Med., 1908.....Jonesboro
McCotter, St. Elmo, Atlanta P. & S., 1908.....Rayboro
*McConnell, John W., Univ. of Md., 1907.....McConnellsville
McKee, John S., Univ. of Md., 1907.....Raleigh
McMurry, Henry Embra, N. C. Med. Coll., 1908.....Sharon, S. C.
Norris, Philip, Univ. of Pa., 1903.....Rutherfordton
Nichols, Austin Flint, Univ. of N. C., 1908.....Mt. Tirzah
Page, Frank Tho. (col.), Leonard Med. Coll., 1908.....Durham
Pate, Fred James, Univ. of Md., 1908.....Gibson

*Made highest grade—a tie.

Name and College of Graduation. *Address at Time Licensed.*

Powell, Jesse A., Coll. P. & S., Balto., 1907.....Harrellsville
Pepper, John Kerr, Coll. P. & S., Balto., 1907.....Kernersville
Perry, Argo Hilliard, Md. Med. Coll., 1907.....Rolesville
Potts, Robert M., Univ. of Md., 1896.....Lancaster, S. C.
Perry, Matthew N. L. (col.), Leonard Med. Coll., 1908.....Fayetteville
Portis, Edgar S. (col.), Leonard Med. Coll., 1908.....Louisburg
Reid, James Wm., ..., 1908.....Lowell
Rich, John Calvin, Univ. of Nashville, 1908.....Dellwood
Royster, Thos. Hays, Univ. Coll. Med., 1908.....Oxford
Robertson, Wilbur B., Balto. Med. Coll., 1908.....Burnsville
Ray, Alex. Hamilton (col.), Leonard Med. Coll., 1908.....Raleigh
Rucker, Adin Adam, Univ. of Md., 1908.....Rutherfordton
Smith, H. T., Med. Coll. of Va., 1908.....Anna
Ross, Geo. Floyd, Univ. of Pa., 1907.....Greensboro
Smith, John McNeil, Jeff. Med. Coll., 1908.....Laurinburg
Smith, Thos. Harlie, Jeff. Med. Coll., 1908.....Liberty
Smith, J. T., Atlanta P. & S., 1908.....Salisbury
Shepherd, F. A., Univ. of Tenn., 1908.....Liberty
Spoon, Arthur O., Univ. of N. C., 1908.....Oakdale
Stryon, Nathan Henry (col.), Leonard Med. Coll., 1908.....New Bern
Shubert, Lewis Hecter, Tenn. Med. Coll., 1906.....Enfield
Scoffield, E. J., Univ. of N. C., 1908.....Waffinger's Falls, N. Y.
Stafford, Wm. Walter, Univ. Coll. Med., 1908.....Elizabeth City
*Terrell, A. J., Univ. of N. C., 1908.....Old Fort
Taylor, James Thos., Univ. of Md., 1908.....Raleigh
Thornton, Frank J. (col.), Leonard Med. Coll., 1908.....Raleigh
Timberlake, Richard E., Jeff. Med. Coll., 1908.....Youngsville
Torrence, Wm. Green (col.), Leonard Med. Coll., 1907..Huntsville, Ala.
Thornton, Irene (female), Woman's Med. Coll., 1908.....Fayetteville
Upchurch, Robt. T., Jeff. Med. Coll., 1908.....Apex
Webb, Samplet E., Univ. of N. C., 1908.....Brown's Summit
Winslow, C. F., Univ. of Md., 1908.....Hobbsville
Whitesides, Geo. Wash., Univ. of Nashville, 1908.....Uree
Whitley, A. H. D., Balto. Med. Coll., 1908.....Monroe
Woodard, Wm. Tilson, Univ. of N. C., 1907.....Democrat
Walters, Chas. Manly, Univ. of Md., 1908.....Burlington
Watson, John Floyd, ..., 1908.....Raleigh
Wichner, Wm. Arthur (col.), Leonard Med. Coll., 1908.....Raleigh
Winstead, Geo. Lee (col.), Leonard Med. Coll., 1908.....Rocky Mount
Watkins, Fred Henry (col.), Leonard Med. Coll., 1908.....Wadesboro
Wakefield, H. A., N. C. Med. Coll., 1908.....Charlotte
Wilson, Walter P., N. C. Med. Coll., 1908.....Sandy Ridge
Ward, Vernon Albert, Jeff. Med. Coll., 1908.....Wilson
Wellborn, Wm. R., N. C. Med. Coll., 1905.....Coleridge
Wilkerson, Chas. E., Univ. of Nashville, 1907.....Greensboro
Young, C. R., Univ. Med. Coll., 1908.....Angier

*Made highest grade—a tie.

The following was received too late to be inserted under Necrology. The rest of the book was in type and the proof corrected.

THE CUMBERLAND COUNTY MEDICAL SOCIETY,
FAYETTEVILLE, N. C., Feb. 18, 1909.

DR. D. A. STANTON, *Secretary. High Point, N. C.*

DEAR DOCTOR:—Enclosed I hand you a memorial of Dr. T. D. Haigh, written in July, 1908, by Col. C. W. Broadfoot, and adopted at the February meeting of the Cumberland County Medical Society as the memorial of the society to be placed on the minutes, a copy to be transmitted to you for publication in the proceedings of the State Society for 1908.

Yours fraternally, WM. S. JORDAN,
Secretary.

IN MEMORIAM.

Day by day we pass a house with closed doors and drawn shutters. All is quiet and gloomy within its threshold. A Jessamineoides, clambering upon the piazza blooming far beyond its season, still shows a few fragrant pure-white flowers, as if to tempt the hand that trained it back with its tender touch.

White flowers—emblematic of him who bore "the white flower of a blameless life." All Haymounters know, that this was the home of Dr. Thomas Devereaux Haigh, third son of Chas. T. Haigh and wife, Sarah, born Crother,—born September 27, 1829, died March 23, 1908. Married Rebecca S. McRae December 28, 1852.

His whole life of nearly four score years was spent in Fayetteville, for surely his was a life of service. If asked to name his motto we should say offhand, that English-like,—it was that of the head of his race, King Edward VII,—"I serve." But a moment's reflection would tell me to write upon his escutcheon only one word, the keynote of his life,—DUTY. This was his inspiration, to do his duty, and his duty was to serve. His God first, next his family with a husband's love, a father's care; then his country, his friends always at all times, his patients with a devotion seldom equaled, never surpassed; then all about him, kindly courteously, generously.

The writer knew Dr. Haigh for half a century and feels his is not the pen to write his eulogy. He was too close to him. Owes to his skill as surgeon and physician the better part of his life; or rather owes to the watchful eye, the cool judgment, and more than all, sympathy under suffering, something we have felt but can not describe, of this good doctor—life itself. Many a poor woman, who has had him beside her bed for hours on the stretch, will know what we mean, and say, Amen!

Dr. Haigh had all the honors his profession in the State could give him, but his reputation will rest securely upon the work he did and the good opinion he won among those he visited, as a plain country doctor. We make bold to hold him up to his professional brethren of to-day as an exemplar worthy to be followed. His very presence in the sick-room was inspiring, his manners easy, winning, cordial, friendly; his questions few, pointed, but in language most refined; his eye searching; his touch gentle as a woman's; his words guardedly measured, weighed in golden balances, hopeful always; his face bright if possible, if not, then trustful, hopeful, calm. He never left a sick-bed without a word or look of cheer, if his conscience and judgment would allow. The late Peter M. Hale, with an incurable disease, "came home to die under Dr. Haigh's hands." The tenderness shown by these strong, able noble men, lifelong friends, classmates at college and school, toward each other was touching in the extreme.

Dr. Haigh kept up with his books, tried all that was new, which his judgment approved, and stood fast by the old remedies and traditions of the fathers. When called to a patient, he held sacred all that passed in that patient's home, and never talked indiscreetly about his cases. Nothing ever leaked out from him. He carried to his grave many a family secret. We commend, without offense, this control of the tongue to his successors.

Why multiply words about the professional life of Dr. Haigh? He stood for all that was highest, best, most honorable in his profession.

We have played chess with him for hours, and recall with pleasure his keen interest in the game and his nice sense of the proprieties of the board. He enjoyed the game, not the victory.

We served as a private under him, when upon an emergency for a short time he laid aside his profession and with belted sword as captain, commanded the Clarendon Guards, at Fort Fisher, a company made up of judges, doctors, lawyers, merchants, preachers, and boys. The survivors of that mixed company will tell you to-day how his good sense and good temper made him a splendid officer.

Dr. Haigh was one of the few—alas, how very few!—who set proper value upon the social duties of life, and did them, of course. He made it a point to call upon strangers, go to weddings, to all gatherings of his friends, to funerals, and was found always, *Deo volente*, up to the week of his death, at church. He learned and put in practice the lesson hard to most of us, of how to grow old gracefully, graciously; and never lost interest in those about him. He was never so happy as when surrounded by children and grandchildren under his own roof-tree.

A grand old man is gone out from amongst us. Let us take to heart the lesson of his life. Duty—first, last, all the time,—duty cheerfully, politely, honestly, honorably done.

In common with his fellow-citizens, we admired his talents, his high character, his many good qualities.

We will each and all recall him as "one who bore without reproach the grand old name of gentleman." But the writer prized most highly his friendship. A month or so before he died, he brought to our office and read to us a beautiful piece of poetry, entitled "The Answer of the Leaves"—said his thoughts had been attracted to the falling leaves blown hither and thither by the winds. And he had put them into verse. We asked him to publish the verses. He said no. He wanted to read it to Myrover and myself only. The original lies before us, and we can not resist the temptation to quote the last stanza:

"For there's nothing that dies but a germ does entwine
That surely will blossom with glory divine.
It will come in its glory to you and to me
The beautiful flower, from the leaf on the tree."

His heart was surely fixed "where true joys are to be found." When we think of our friend, gone before, again and again the lines from Jerusalem the Golden come to us:

"There from care released,
The shout of them that triumph,
The song of them that feast."

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